Latin Paleography

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From Antiquity onward authors have been reflecting on the fact that writing, by translating intelligible but fleeting sounds into enduring visual symbols, has enabled humans to overcome the feebleness of their memory and transcend the limits of both time and place, thus rendering possible the accumulation and dissemination of experience, knowledge, and wisdom that constitute civilization. Even universal recognition of the importance of writing, however, need not have resulted in any organized study of either the origins or the later history of writing. If the learned discipline of paleography now claims to be this organized study aiming at the production of a history of scripts from their beginnings down to the present, it still is far from totally accomplishing its basic task, and it actually came to a full realization of this task only rather slowly and indirectly.

Paleography's own history, which cannot be pursued in detail here (cf. Traube 1909–20, 1:1–80; Brown 1959–63; Petrucci and Pratesi 1988), reveals its development to have been fundamentally determined by its practical role as an auxiliary historical science, teaching how to read and date and place scripts, and much of this development took place under the aegis of other learned disciplines. It was in fact the field of diplomatics that first acutely felt the need to use the evidence of script as one of its criteria for determining the genuineness of charters. The magnificent response to this need provided by Jean Mabillon's De re diplomatica, published in Paris in 1681, actually constitutes, in its sections devoted to scripts, the first study
to which the word paleography could have been deservedly applied. The word itself, however, does not seem to have come into common use until 1708, when Bernard de Montfaucon published his study of Greek scripts and entitled it *Palaographia Graecarum*. Because so many of paleography's tasks were long entrusted to, or claimed by, scholars whose primary allegiance was to diplomacy, epigraphy, numismatics, sigillography, or papyrology—not of which treats scripts for their own sake—paleographers proper long tended to concentrate their attention on the largely unclaimed scripts found in manuscript books. Today, however, there is rather general agreement that paleography should concern itself with the history of scripts wherever they are found, perhaps even with those frozen into type fonts. The vast expansion of paleography's field of concern that results from this attempted unification of interests previously so scattered does not eliminate, rather it reinforces, the need for divisions of labor on the basis of alphabets, time periods, etc. Now, however, the divisions can be based on factors more intrinsic to scripts themselves, and the laborers in the field can be more aware of, and hence more able to profit by, what their colleagues are doing in other corners of the same field. The focus in the present instance will be on scripts using the Latin alphabet and practised during the Middle Ages. For general introductions to other alphabetic, syllabic, and pictographic forms of writing, cf. Jensen (1969) and Diringer (1953, 1968).

Although paleography is claiming with growing insistence to be a full-fledged historical discipline, explanatory as well as descriptive, and seeking after knowledge interesting for its own sake, it continues to serve the practical purposes that presided over its birth and that constituted it as one of the most fundamental of the auxiliary historical sciences. The emphasis here will actually be on these practical purposes, in particular on the problems of describing the characteristics of scripts and of circumscribing the times and places of their use, since such an emphasis seems best suited to the needs of the beginner for whom this chapter is primarily intended. It is hardly necessary to add that these same problems are also intimately involved in any full-fledged historical approach to scripts.

The assignment of an approximate date and place of origin to a manuscript on the basis of its script—what can be called applied paleography—depends for its success on the prior establishment or ascertainment of some rules of scribal behavior peculiar to different times and places—what can be called theoretical paleography. The possibilities of pursuing theoretical paleographical studies have been extraordinarily enhanced in recent years by the publication, under the aegis of the Comité International de Paléographie Latine, of numerous illustrated national catalogues of dated manuscripts (cf. CMD and Les manuscrits datés 1985). The exact nature of the argumentation used by theoretical and applied paleography cannot be discussed here (cf. John 1987, 337–41; Autenrieth 1978; also Gilissen 1973 and in Techniques 1974, 25–40; Poulle 1974). It is important to remember, however, that the conclusions that applied paleography reaches with respect to the date and place of origin of a given manuscript may be true in the abstract or stylistically without necessarily being true concretely or factually. The scribe who learned the writing style peculiar to a given place may in fact have copied the manuscript in a question elsewhere. It is also possible that a scribe may have learned to imitate a much earlier script, or anticipated a script that would become popular only later. For another kind of problem, namely that of determining whether more than one scribe was responsible for a piece of writing that is all in the same species of script, cf. Gilissen (1973) and also Poulle (1974). Macrophotography can be helpful here (cf. ibid.; also Fink-Errera 1962; Garand and Etcheverry 1975).

Just as paleography is itself an auxiliary science, so it has its own auxiliary sciences in turn, some of which may well be independent disciplines in their own right. There is perhaps no discipline that can a priori be excluded from potential service to paleography, but in a narrower and more proper sense its auxiliary sciences are those that provide knowledge about matters having a close and regular relationship to scripts, that is to say, the materials that receive and preserve them, the instruments by which they are made, and the fluid or other medium with which they are made. The paleographer may be forced to become his own auxiliary scientist by default, but if so, he still does not pursue these auxiliary sciences for their own sakes but only insofar as they may throw light on scripts.

Rather recently many of the auxiliary sciences have been drafted into the service of what is called codicology (cf. Masai 1950a; Delaisé 1959; Grujts 1972; Codicologia 1976–; Gilissen 1977; Turner 1977; Canart 1979; Bozzolo and Ornato 1980; Muzerelle 1985; Lemaire and Van Balbergh 1985; Lemaire 1989; Martin and Vezin 1990), a name based on the Latin word for the book in the familiar form consisting of pages within a binding (codex; cf. below, pp. 55–57). Codicology, sometimes also called the archaeology of the book, makes the book, as such, the formal object of attention. All the elements, both material and intellectual, and all the techniques that combine in the production of a book are of interest to the codicologist, and this includes not only the script and any decoration that the book may contain but also the content itself, at least insofar as the latter affects the book's external form. The term "codicology" will actually be used here in a more limited sense for the study of the material support
systems of the script, as if codicology were concerned with the body, and paleography with the soul.

The subjects that will now be addressed and the order of treatment are as follows: terminology, medieval scripts, abbreviations, numerals, punctuation, on reading, transcribing, and describing manuscripts, writing materials, ink, writing instruments, the external form of manuscripts, bindings, modern collections of medieval manuscripts, medieval libraries, and bibliography.

**TERMINOLOGY**

A long-term project is under way to supply paleography with a new and uniform nomenclature, not only for the genera and species of scripts but also for the elements and techniques that go into the making of letters (cf. Nomenclature 1954, 4; Gasparri 1976). Until this very complicated task has been accomplished—and its accomplishment is a long way off—it would be presumptuous to claim more for the terminology used than that it usually reflects common usage.

Most of the names employed for the various straight and curved strokes that combine to form letters are self-explanatory. The most basic stroke, the simple vertical or i-stroke, is called an upright or a minim, this latter name being a word that in Gothic script would be formed of nothing but a series of ten almost identical i-strokes. If minim or other vertical strokes are extended above or below the level of the shortest letters, the projecting portions are called ascenders or descenders, respectively. If the minim or upright, with or without an ascender or descender, supports another part of a letter, it is usually called the stem. The horizontal line connecting the obliques of A and the uprights of H is called a bar. Other horizontals may be called arms or hastas (e.g., in E, F, L) or head- or top-strokes (e.g., in T). The body of a letter is either the entire letter, as in the case of a, c, e, i, etc., or that portion of it that is not an ascender or descender, as in the case of b, d, f, g, h, j, etc. The connective line that may join one letter to the next is often called a ligature, but some authorities would prefer to reserve this term for describing two or more letters connected in such a way as to modify the form of one or more of them (e.g., & for et) (cf. Loew 1914, 140–41).

Of curved strokes, some are named from the letters they form, e.g., the c- or s-curve. Bow or lobe is the name given to the curves appended to a stem to form b, d, p, and q. The curved stroke attached to the upright of h is called a limb.

The serif or filial is the finishing stroke at the beginning or end of letters. Although not absolutely essential to the existence of letters, serifs or finals are nevertheless necessary to the well-being of any letters produced with a somewhat frayed writing edge or with a writing fluid of which the flow is not instantly responsive to pressure.

Scripts as a whole have been classified and named in various ways. A classification emphasizing the process by which they are produced divides them into lettering and writing. Lettering uses more than one stroke for each running segment of a letter, whereas the method is that of building up or filling in or chiseling out the outline of a letter, while writing uses no more than one stroke for each part of a letter. Writing, in turn, has been subdivided into cursive and noncursive. In purely noncursive writing each part of each letter is made in a separate stroke. A cursive tendency is evident as soon as more than one part of a letter is made in one stroke. In a purely cursive script not only would all the parts of each letter be made in one stroke but each letter would, in turn, be connected to its neighbors without the writing instrument being lifted from the writing surface. In practice, of course, scripts can be only more or less, not absolutely, cursive.

Because the modified form that a letter can assume as a result of being written cursively may gain acceptance as the, or at least as a, new standard form of that letter and thereafter become written in non-curvical fashion, a distinction has been proposed between cursive on the one hand and current on the other (cf. Lieftinck 1954, 18–21; 1964, xiv–xv). Cursive would designate letter forms that were the result of having been originally written without the writing instrument being lifted from the surface (e.g., d with its ascender looped), even though they may in fact later be written in non-curvical fashion, while current would designate letters that were actually written without the writing instrument being lifted from the surface.

From an esthetic or calligraphic viewpoint taking both process and appearance into account, scripts have been divided into formal and informal. Formal ones are carefully and deliberately produced, with the pleasure of the reading eye of more concern than the convenience of the writing hand. Informal or "everyday" scripts, produced with dispatch, cater more to the convenience of the writing hand than to the pleasure of the reading eye. In between these extremes there is room for various shades of semi-formal scripts. Formal scripts tend to be non-curvical and informal ones tend to be current, but the correspondence is not exact.

Another classification, based mainly on appearance, has divided scripts into majuscule and minuscule. Majuscule designates an alphabet of which the letters are all of the same height (the printer's uppercase letters or capitals), while minuscule designates an alphabet of which some letters have
ascenders or descendents (the printer’s lowercase letters). Making a distinction that may not have been in the medieval scribe’s mind, modern scholars have often defined majuscule scripts as those written or lettered between two real or imaginary parallel lines and minuscule scripts as those between four parallel lines of which the inner two contain the bodies of the letters and the outer two contain the ascenders and descendents (for a critique of this distinction cf. Mallon 1952, 102–103).

Finally, from the viewpoint of their content, scripts have been divided into hooked or literary on the one hand and chartor or documentary on the other. The content need not, of course, have any effect on the intrinsic nature of the script, but in fact book scripts tend to be more formal and less cursive than charter scripts, and charter scripts in turn are more apt to cultivate idiosyncrasies that render forgery more difficult.

Shading means that a script has contrasting thick and thin strokes. It results, at least in writing as distinguished from lettering, either from a change of direction in the path of a broad-nibbed writing instrument or from a change in pressure on a flexible writing instrument. Shading caused by a broad nib produces a measurable script or writing angle, that is, the angle formed by the intersection of the thickest stroke with the horizontal writing line, the measurement being made in a clockwise direction from nine o’clock. This angle, the result of several variables, should be distinguished from a script’s slant, which refers to the departure from the vertical, either to the left or to the right, of a script’s minim and especially of its ascenders and descendents.

Ductus usually means the number, sequence, and direction of the strokes used in forming each letter of the script’s alphabet, although the term is sometimes extended to include shading and pressure as well. A knowledge of ductus, which is more concerned with the dynamic than with the static aspect of letters, can be helpful in reading, dating, and placing scripts, but its most important service comes in explaining changes in the appearance of letters. It is largely ductus that determines where the inertial forces and strains generated by rapid writing will express themselves. But if ductus can help generate changes in appearance, changes in appearance can also generate and have generated changes in ductus. Gumbert (1974, 216–17), who uses the word structure for ductus, distinguishes two kinds of change: metaphor when the form changes but the ductus or structure remains the same, and metanalysis when the form remains the same but the ductus changes.

Because the names of particular canonical scripts will be discussed in the following section, they need not be mentioned here, but something should be said about the term canonical itself. A canonical, or canonized, script is of course a standard, widely used one, but more specifically it is one that has a well-defined and regular morphology with respect to all its structural elements and that possesses a recognized unity setting it apart from all other scripts, whether canonized or not (cf. Cencetti 1954–56, 55–56).

Provenance sometimes designates a manuscript’s place of origin and sometimes any place where a manuscript has been preserved, but it serves best to designate a manuscript’s earliest documented place of preservation. When place of origin is known, it is identical with provenance; when it is not known, provenance offers probable evidence for place of origin, the degree of probability declining as the time between the estimated date of origin and the date of attested provenance increases.

Finally, a word should be said about the names of individual manuscripts and scribes. The problem of identification that arise from the custom in scholarly literature of citing individual manuscripts by names derived (and frequently turned into Latin) from former or current owners and places of preservation can mostly be solved with the aid of the chapter on “The Nomenclature of Greek and Latin Mss.” in Hall (1913, 286–357). The best guide to Latin place names is Graesse-Benedict-Plesch (1972). As for the names of medieval scribes, the most comprehensive collection is contained in Colophons (1965–82). (Cf. Catich 1968, 3–20; Cencetti 1954–56, 51–57; CLA, 6-xii; Gasparri 1976; Mallon 1952, 100–104; Meyer and Klauser 1962; Nomenclature 1954; Parkes 1969, xxvi; Valentine 1965; Weijers 1989. An exhaustive codicological nomenclature in French is provided by Muzerelle 1985.)

A Sketch of Medieval Scripts

The following survey, because of limitations of space, presents only a succinct description of the more common medieval scripts, along with some delineation of their temporal and geographical boundaries. Historical explanations of the origin, development, spread, contraction, and disintegration or disappearance of these scripts, which would present a more fascinating, if less certain, side of paleography, have not been emphasized. However, even if it were possible to arrive at definitive answers to the explanatory questions, these answers would still be less relevant than the descriptive ones to paleography’s role as an auxiliary science. A small selection of facsimiles with transcriptions is inserted to aid in identifying the scripts being discussed.
The history of Latin script in the Middle Ages can be divided into at least three periods: (1) early medieval or pre-Caroline, (2) Caroline, and (3) Gothic. Each will be treated in turn. But, for reasons to be supplied below, some attention must also be directed first to the preceding Roman period and later to the succeeding humanistic and modern periods. The resultant sixfold periodization of the history of Latin script is certainly open to further refinement, but so long as the individual scripts within each period can be satisfactorily defined, dated, and placed, the main objectives of paleography as auxiliary science can be attained.

Roman Scripts

The Roman scripts, the history of which can itself be further periodized, naturally provide the background for the medieval scripts, but the slighting of historical explanation here would justify their being overlooked if it were not for the fact that some of them overlapped into, and some were revived during, the Middle Ages. The archaic script seen on the Lapis Niger and the Praenestine brooch (cf. Steffens 1969, pl. 1; Degering 1929, pl. 1; Diehl 1912, pl. 1 and figure on p. vii; Jensen 1969, figs. 510–11), ascribed to the sixth or fifth century B.C., was not used in the Middle Ages. But of the scripts that achieved a certain canonical status among the various types competing for favor in the late republic and early imperial periods, namely rustic and square capital and the earlier Roman cursive, only the cursive failed to enjoy some medieval usage. Of the canonical scripts developing from the second to the fourth or fifth century after Christ, namely the primitive minuscule or early half-uncial, the later Roman cursive, uncial, and half-uncial, all but the primitive minuscule overlapped into the Middle Ages. (Cf. ChLA passim; CLA passim; Mallon 1952, 1961; Mallon, Marichal, and Perrat 1939; Marichal 1943; Schiaparelli 1921; Seider 1972–81; Zangemeister and Wattenbach 1876–79.)

Rustic Capital

The rather inappropriate name "rustic" has been applied to this script because it seemed less formal and elegant than the square capital (see below). Rustic, which was the formal bookscript of the Romans, got its characteristic appearance from its pronounced shading, its finalis, and the uniform height of nearly all its letters. Only E and L exceed the majuscule uniform-height rule with any frequency, though B, G, and Q also do so in some examples of the script. The thickest strokes tend to run at an angle about 45° above the horizontal writing line. Vertical strokes or strokes leaning to the right, which naturally are thin, have thick nearly horizontal finalis at the foot, unless (as the third strokes of M and N and the second stroke of V) they are joined there to another part of the letter (see fig. 1.1). The script was full-fledged in the first century after Christ and it continued in use as a deluxe text script through the sixth century and for centuries longer as a script for titles and other special purposes, being especially popular in Spain. It was revived for prefatory texts in England in the eighth century (CLA, vol. 2, no. 193; vol. 5, no. 526; Lowe 1960, 21, 22, and pls. XXVII, XXX) and in France in the Carolingian period. The Utrecht Psalter (cf. Codices Selecti, vol. 75, 1982, for a complete facsimile edition) is one of the most famous examples of the script in its ninth-century French revived form. Strangely enough, rustic capital was not revived by the humanists. (Cf. Pratesi 1964; Autenrieth 1968; Bischoff 1990, 55–61.)

![Fig. 1.1. Rustic capital. Probably Italy. Ca. A.D. 400. Bibliotheca Vaticana MS. Palat. Lat. 1631, fol. 20v. Alphabet from Ehrle and Liebaert (1932), pl. 3b.](image)

Square Capital

The name square or elegant or monumental capital has been given to very formal Roman majuscule scripts akin to the Roman upper case letters in modern printing fonts. Square capital shared the essential letter forms and ductus of rustic capital, but its thickest strokes were more vertical, running at an angle about 60° above the horizontal writing line, and a different principle governed the use of serifs. The writing was not always entirely "natural," since it could call for or allow a conscious change of script angle for certain strokes and sometimes it could pass over the border from writing to lettering, even when it was not executed with a chisel. Actually all the oldest extant examples, going back in less elegant forms to the third century B.C., are inscriptions, and with a few exceptions all the later and medieval ones are also either inscriptions or titles in manuscripts. In inscriptions the acme of perfection was reached in the second century after Christ (see fig. 1.2). As a script for the text of books in the Roman period square capital survives only in three fragmentary copies of
Vergil made between the fourth and sixth centuries (cf. CLA, vols. 1, 8, no. 13; vol. 7, no. 977; vol. 10, no. 1569). The letter forms in the three examples are by no means identical. Most authorities now doubt that this script was used for book texts either before or after the period of these Vergil manuscripts, but for titles and other special purposes it continued in use for centuries, undergoing a purifying reform in the Carolingian period. Then, after several centuries of hibernation, it was revived by the humanists of the fifteenth century and has remained in use ever since. (Cf. Autenrieth 1988; Bischoff 1990, 59–61; Mciss 1960.)

Fig. 1.3. Uuncial. Luxeuil, France. A.D. 69. New York, The Pierpont Morgan Libr. MS. M. 334, fol. 132r. Reproduced with permission.

\textit{Verba morientis quomodo si quis existat qui dicit eis nolite facere quid ergo illi dicanter, ergo non facio quod mihi pater meus}

extended several centuries beyond this. This very early variety of the script used minuscule forms of \( b \) and \( d \), which may suggest an original connection of uncial with primitive minuscule or early half-uncial. A group of fifth- and sixth-century uncial manuscripts with a characteristic form of \( B \) and \( R \) and mostly of legal content seems to have originated in Constantinople (cf. Lowe 1972, 2:466–74, and pls. 108–13). No example of uncial is known to survive from Ireland, and it shared rustic capital’s neglect by the humanists. (Cf. Chatelain 1901–2; Lowe 1960; Lowe 1972, 1:103–26, 277–88, and pls. 8–21, 31–36; Petracci 1971; Tjäder 1974; Bischoff 1990, 66–72.)

Uncial

The letters of which the forms especially distinguish uncial from rustic capital are \( A \ D \ E \ G \ H M \ Q \) (see fig. 1.3). Rustic’s characteristic finishing at the foot of vertical strokes is lacking in uncial. This script is only imperfectly majuscule, since it always has letters projecting above the headline and below the base-line, especially \( D H L \) above and \( F G P Q Y \) below, but in the earliest examples of the script the projections are slight. The script is also roundish, but less so earlier than later. Although no extant example can be dated with certainty before the second half of the fourth century (cf. CLA, vol. 4, no. 467), uncial probably developed in the third or even second century. Extant remains, which are probably not perfectly representative, suggest that uncial was the most popular script for copying the text of books from the fifth century until well into the eighth. Of about 1,800 Latin literary manuscripts surviving from before the ninth century almost a third have at least a part of their text copied in uncial. As a text script uncial had a continuous existence from the ninth century and was revived in the tenth in the Ottonian realm (cf. Lowe 1972, 2:399–416, and pls. 80–87). For titles and other special purposes its continuous existence

Half-uncial

This script, which has its thickest strokes almost perpendicular to the writing line, is uncial’s nearest rival in popularity for the copying of books during the fifth, sixth, and seventh centuries. CLA assigns about one third as many half-uncial manuscripts (127) to these three centuries as uncial ones (380), with the ratio about one to four in the fifth (30:113) and seventh (37:144) centuries and about one to two in the sixth (60:123). The reason often given for the name that has been applied to this script since the eighteenth century at latest, namely its supposed devolution from uncial, is no longer accepted, but the name itself can still usefully serve to designate a rather well-defined species. Of the canonical form of half-uncial (see fig. 1.4), which was used well into the Middle Ages and which differs basically from uncial in its \( a \ b \ d \ g \ m \ r \ s \) and from rustic capital also in its \( e f h g \), the earliest surviving dated examples come from shortly before A.D. 486 and 509/10 respectively (CLA, vol. 4, no. 508; vol. 1, no. 1a). However, the fully developed form of half-uncial seen in these manuscripts was prob-
ably already in existence by the beginning of the fifth century or earlier (cf. *CLA*, vol. 3, no. 286; vol. 7, no. 984). The use of canonical half-uncial for the body of texts became less frequent in the eighth century, though it did not entirely cease until the ninth.

A somewhat similar and older script, to which the names “early half-uncial” and “primitive minuscule” have been applied, may be the product of an unrelated development taking place in the eastern Mediterranean (Bischoff 1990, 72-75) and hardly surviving the fifth century. This early half-uncial has more features in common with uncial, especially its a g s, and probably goes back to a period before uncial itself had attained its canonical form. The best known representative of this type is the Epitome of Livy, ascribed to the first half of the third century (Mallon 1961, 576-77; *CLA*, vol. 2, 2d ed., no. 208).

For more on half-uncial, see below under Insular, Visigothic, and Caroline scripts. (Cf. Chatelain 1901-02, pls. 61-100; Lowe 1972, 1:139-41, 303-14, and pls. 39-42; Bischoff 1990, 72-78.)

**Roman Cursives**

The earlier or older Roman cursive (cf. Steffens 1909, pl. 4; *CLA*, vol. 8, no. 1038), known also as majuscule or capital cursive and what Mallon (1952) and others now call the “classical common” (or “everyday”) script, did not survive into the Middle Ages except in a bizarrely elaborated and hardly recognizable form used from the fourth to the seventh century for the first line of *Gesta municipalia* (cf. Tjäder 1954-82, 1:122, and pls. 41-45, 85). The later or newer Roman cursive, known also as minuscule cursive and what since Mallon is often called the “new common” (or “everyday”) script (see fig. 1.5), took form no later than the second half of the third century and continued in use in some places as late as the eighth century. In the chancery at Naples it actually survived in not very altered form for several centuries longer (cf. Mazzoleni 1972, pls. IV-V). In certain areas and at different times between the sixth and eighth centuries this cursive was transformed, almost imperceptibly, into a number of book and documentary scripts with certain regional or “national” variations (cf. following section). Not only were two or more parts of a letter often made in one stroke, by means of loops and other connective strokes, but ligatures of two or more letters were frequent, sometimes even of letters from adjacent words. The uprights in this cursive often inclined somewhat to the right and strokes were normally not very shaded. In the well-known example shown in fig. 1.5 the b still has the form with its bow on the left, as in the older Toman cursive (cf. Mallon 1952, 32-35; Mallon 1961, 553-54, on the derivation of this form). (Cf. also Bischoff 1990, 61-66; Tjäder 1985.)
West gradually to drift apart in their writing habits. The unconscious drifting apart was already underway in the sixth century, but that it had gone far enough to constitute a new era by the seventh or even by the eighth century would be hard to establish if the further “natural” aging of some of the traditional scripts had not been accompanied, starting in the sixth century but particularly in the seventh and eighth centuries, by clearcut and conscious transformations of half-uncial and the later Roman cursive. The Irish would be transforming a variant version of half-uncial by the late sixth century. A series of transformations, for book purposes, of the cursive documentary script that had grown out of the later Roman cursive would get under way in France by the mid-seventh century. In Spain half-uncial and cursive would both be transformed into a new script, the Visigothic minuscule, no later than the early eighth century. And in Italy by the mid-eighth century the inherited documentary script would be forged into one of the longest lasting of medieval book scripts, the Beneventan minuscule. These transformations, which will now be treated in brief detail, were only the more successful among many. A welter of other less popular examples, the full range of which can be seen in the facsimiles in *CLA* and *ChLA*, contributes to the picture of this period as one of increasing disunity in script. Most of these scripts would be swept away by the Carolingian minuscule during the eighth century and the first half of the ninth, but those used on the newly contracted southern periphery and on the newly expanded northwestern periphery of the Latin-writing world would endure for at least several centuries longer. In addition, certain documentary scripts that developed out of the later Roman cursive, in particular the scripts of the Merovingian royal chanceries (cf. Lauer and Samaran 1908; Lot and Lauer 1936–49) and of the papal curia (cf. Rabikauskas 1958; Battelli 1965), would survive for several more centuries in the very heartland of the Latin-writing world. (Cf. *ChLA* and *CLA* passim; Lowe 1972, 1:2–65, and pls. 1–7; Bischoff 1990, 83–111.)

**Insular Scripts**

Perhaps the most distinctive and significant scripts to develop between the Roman and Carolingian periods are the Insular ones, so called because of their origin in Ireland and their long dominance throughout the British Isles. Among the extant manuscripts in these scripts are such unrivaled monuments of calligraphic skill as the Lindisfarne Gospels and the *Book of Kells* (cf. *CLA*, vol. 2, 2d ed., nos. 187, 274), both available in complete facsimile editions, the latter also entirely in color.

Two main types of Insular script developed, one called half-uncial or round or (by Lowe in *CLA*) majuscule, the other called minuscule or pointed. Each type was subject to variation with respect to formality or currentness as well as to individual letter forms, and one type also sometimes merged on the other. To cover these variations T. Julian Brown (1982, 101–2, and in his 1977 Lyell Lectures being prepared for posthumous publication) has proposed a fivefold classification of Insular scripts: half-uncial, current, cursive, and set minuscule, and hybrid minuscule incorporating various borrowings from half-uncial. The Insular round, a broad script with its thickest strokes almost perpendicular, tended to have most of its curved strokes formed according to the same symmetrical pattern and to be more circular than oval. The *a* looking like contiguous *oo* is characteristic. Even *l* and the upright of *b* have the form of shallow, reverse *s* curves. Ascenders and descenders do not project far beyond the body of the letter, the majuscule principle being observed about as faithfully as in uncial. Uprights have characteristic wedge-shaped finials. Ligatures are rare. The basic forms of all the half-uncial letters are usually found in this Insular script, but if a half-uncial alphabet provided the raw material, it must have been a half-uncial of a pre- or uncanonical type (cf., e.g., *CLA*, vol. 3, no. 395), because the script normally uses non-half-uncial as well as half-uncial forms of *d n r s* (see fig. 1.6, where, however, only the half-uncial form of *d* occurs).

The minuscule or pointed type of Insular script (see fig. 1.7) has its thickest strokes sometimes running at an angle of 30° or less clockwise from the horizontal writing line. This angle facilitates ending the feet of descenders in a point. Letters are much more compressed laterally, with

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**Fig. 1.6. Insular round. England. Mid 8th cent. New York, Morgan Libr. MS. M. 776, fol. 15r. Reproduced with permission.**

> et confitebitur tibi dum benefeceris ei. | Et introbit usque in progeniem patru(m) suoru(m) | et usque in aeternum non uidebit lumen. | Et homo cum in honore esset non intellexit.
in Germany. Noticeable differences eventually developed between the Irish and English ways of writing, but in the early period they are hard to distinguish. Because of the Irish propensity for traveling, it may be hazardous to regard a documented actual place of origin as a stylistic place of origin.

The use of the round script was declining already in the ninth century, but a version of Anglo-Saxon minuscule called “square” and widely used in the tenth century south of the Humber shows some round influence (cf. Dumville 1987; Steffens 1909, pl. 11a). Irish examples of round used for special purposes survive in Gaelic texts from as late as the fifteenth century. The pointed script died out in Germany by the mid-ninth century, in England for Latin texts during the tenth and eleventh centuries, and for vernacular texts by the thirteenth, and in Ireland for Latin texts in the thirteenth, but for Gaelic texts a modified version of it has never completely died out down to the present day. (Cf. Bieler 1949; Bischoff 1966–81, 3:39–54; Bischoff 1990, 83–95; T. J. Brown 1972, 1982, 1984; CLA, vol. 2, x–xvi [2d ed., xiv–xx]; Gneuss 1981; Lindsay 1910, 1912; Lowe 1972, 2:441–58, and pls. 95–102; Morrish 1988; O Cróinín 1984; O'Neill 1984; O'Sullivan 1985; Spelling 1978.)

Visigothic Minuscule

This script, which was called littera Toletana (i.e., the Toledo script) in the Middle Ages, developed in Spain and in the adjacent regions of what is now France at latest early in the eighth century and probably by the late seventh. The modern name receives its justification from the fact that the script took shape during Visigothic rule of this region, even though this rule was about to be ended by Moslem conquest and even though the elements of the new script were of Roman, not Visigothic, origin. This script may resemble as well the kind of script that must have continued to be used in Latin-speaking communities in Africa after the Moslem conquest, if one may judge by several Latin manuscripts preserved at St. Catherine’s monastery on Mt. Sinai (cf. Lowe, 1972, 2:417–40, 520–74, and pls. 88–94, 120–28).

All the letters of the half-uncial alphabet except g and N are found in the Visigothic alphabet and the breadth of the script, especially in its first centuries of existence, is also reminiscent of half-uncial. Even the characteristic uncial g may come from a variant version of half-uncial (cf. CLA, vol. 4, nos. 410a, 474; vol. 11, no. 1636). But the script also incorporates numerous elements from the later Roman cursive, particularly ligatures
of e with a following c m n r s or x and of t with a following e i or r. Other characteristics include the regular use of a tall i at the beginning of words (though not always before another tall letter) and in mid-word for the semiconsonantal sound (as in eius), a t with its horizontal stroke extending further and further down to the left, eventually touching the stem at the baseline, and a tall, thin y (see fig. 1.8).

\[ \text{\textit{fig. 1.8. Visigothic minuscule. Spain, A.D. 925. New York, Morgan Libr. MS. M. 544, fol. 172r. Reproduced with permission.}} \]

\[ \text{qui fuerint tempore eli firmati. | Antidhr(istus) enim quam uenerit le-} \]

\[ \text{gem | priscam et circumcisionem ad|ntabit. Cogendum est | omne} \]

\[ \text{gen(us) hominum Iudayce.} \]

The Visigothic minuscule had assumed a rather manners form by the late eleventh century, when it was beginning to be supplanted by Carol- line minuscule. It has been claimed by Mundó (1965) not to have died out until the early fourteenth century, but Millares Carlo and Ruiz Asencio (1983, 1:179-81) still defend the traditional view that it disappeared in the twelfth century. Various criteria have been discovered for the dating of Visigothic minuscule. The most useful, perhaps, at least for manuscripts produced in the northern, non-Moslem regions, is a graphic distinction introduced into literary manuscripts by the mid-tenth century between the assimilated and unassembled sounds of ti (cf. Lowe 1972, 1:40-64; Robinson 1939, 26). From this period onward the i for the assimilated sound was extended below the baseline (see fig. 1.8, line 4). In general the script in the earlier period tends to lean to the left and its ascending strokes are club-shaped. In the later period ascenders have horizontal or oblique hairline approach strokes from the left. (Cf. also Actas passim; Arribas Arranz 1965; Avelino de Jesus da Costa 1990; Bischoff 1990, 96-100; Burnam 1912-25; Canellas 1974, vol. 2; Ewald and Lowe 1883; García Villada 1923; Millares Carlo and Ruiz Asencio 1983; Millares Carlo 1963, 1973; Nunes 1969-).

\[ \text{Beneventan Minuscule} \]

This script, named from the duchy in which it developed, is one of the most distinctive and enduring of the entire Middle Ages. The Benedictine abbey of Monte Cassino was the chief center for the production of Beneventan manuscripts, but the script was widely used in the surrounding regions of South Italy, and from the tenth to the twelfth century later it was also used in Dalmatia. The earliest extant example seems to date from the mid-eighth century (cf. CLA, vol. 3, no. 381) and the latest date from the fifteenth century and even early sixteenth (cf. V. Brown 1988; Kirchner 1955, pl. 28b). Examples of Beneventan minuscule have been identified in far more than a thousand extant, often fragmentary, manuscripts (cf. Loew and Brown 1980, vol. 2; V. Brown 1988).

The script derived most of its elements directly or indirectly from the later Roman cursive (as this was practiced in the eighth century) and during seven centuries of development it never lost the traces of its cursive origin, even though it gradually became one of the most formal and deliberate of all medieval scripts. In its mature phase, which it attained in the eleventh and twelfth centuries, the script shows regular and pronounced shading, with the thickest stroke running at an angle about 45° or less above the horizontal writing line (see fig. 1.9). The minim or i-stroke was broken into three segments, with the original body of the stroke reduced to an oblique hair-line connecting two enlarged lozenge-shaped finials. The most characteristic individual letters are a and t (distinguishable, once the top of t has begun to curve down on the left to touch the vertical at the base-line, only by a difference in the direction of their final strokes at the upper right) and tall i (used regularly both at the beginning of a word, except when followed by a letter with an ascender, and in mid-word for the semiconsonantal sound). Other characteristic features are obligatory ligatures of ei, fi, gi, li, ri, and ti, with the last having two forms according as the sound of ti is assimilated (see fig. 1.5, col. b, lines 2, 3) or unassembled (see col. a, line 2). Still another feature characteristic from the mature period onward is the union of facing bows (see, e.g., the uncials d and o on fig. 1.9, col. b, line 4), achieved usually by juxtaposition rather than by overlapping. A variant type of Beneventan, rounder and less shaded, developed in Southeast Italy around Bari and in Dalmatia (cf. Loew and
Merovingian Scripts

If a script very much like the Beneventan might have come to prevail throughout the whole of Italy and in Southern Switzerland as well, the possibility was cut short by the triumph of Caroline minuscule. So too in the Merovingian lands, by which are meant here most of modern France and adjacent parts of the Lowlands, Germany, and Switzerland, candidates for the role played in South Italy by the Beneventan minuscule and in Spain by the Visigothic could not establish their dominance before they too, except for the Merovingian chancery scripts, were all swept aside by the same Caroline minuscule. Some of these Merovingian scripts are calligraphically and culturally very interesting, but because they survive in relatively few examples from rather brief spans of time, they cannot be given more than cursory attention here (cf. Bischoff 1990, 100–109).

The same Roman script models—particularly uncial, half-uncial, and the latter cursive—were available for imitation and further development in Merovingian lands as were available in Italy and Spain. Uncial and half-uncial, in fact, continued to be used both for texts and for titles and other special purposes. The script named after Abbé Leutchar of Corbie (fl. ca. A.D. 763), for example, is basically half-uncial (cf. CLA, vol. 6xxiii–xxiv; vol. 8, no. 1,067a; vol. 11, nos. 1,601–2). Uncial and half-uncial were also subject to mixing with each other and with descendants of the later Roman cursive. An example of the latter process is furnished by another script used and probably developed at Corbie in the latter half of the eighth century and called e/N because its N invariably has the capital form and its e ligates with a following m r sts x and possibly other letters but not with N (cf. CLA, 6xxiv–xxv, and no. 711; vol. 5, nos. 638, 647, 655–57; Kirchner 1955, pl. 33; Stiennon 1973, 208–9). This script combines elements of a small and rapid form of half-uncial with ligatures derived from the later Roman cursive. Both the Leutchar and e/N developments may well have begun after Pepin's coronation had put an official end to the Merovingian dynasty. Long before this, however, and certainly by the beginning of the seventh century, the later Roman cursive had acquired, whether by design or by gradual and unconscious transformation, a characteristic form (see fig. 1.10) that would maintain recognizable continuity in royal charters through the Carolingian and into the Capetian dynasty until the early eleventh century (cf. Lauer and Samaran 1908; Lot and Lauer 1936–49; Prou 1924, pl. X, I; Steffens 1909, pl. 28; Mallon, Marichal, and Ferrat 1939, pl. XXVII, 38). The name Merovingian has been most appropriately applied to this script, since all the earliest extant examples occur in charters issued by the Merovingian kings, but the name can justifiably be extended to other scripts evolving or devised in the same area during the pre-Carolingerian period and in particular to a series of new books scripts that are conscious, calligraphic stylizations of the Merovingian charter script, even though some of them did not actually come into existence until after the Merovingian dynasty had disappeared.

The earliest of these calligraphic stylizations, and one of two surviv-
ing in thirty or more examples, is called Luxeuil from the monastery where it was most likely designed and employed (see fig. 1.11). Various kinds of evidence argue for its use in the second half of the seventh century and in the first half of the eighth (cf. CLA, vol. 6xxv–xxvi; vol. 5, no. 579; Lowe 1972, 2:389–98, and pls. 74–79; Kirchner 1955, pl. 31; Lowe 1969, pl. X; Mallon, Marichal, and Perrat 1939, pl. XLV, 65; Steffens 1909, pl. 25a).

The eighth-century script called az from its two characteristic letter forms is a variant of the Luxeuil type, which had already made some, but not regular, use of these same forms (cf. CLA, vol. 6xxviii, nos. 752, 765, 766; Kirchner 1955, pl. 32, lines 7, 11 for z; Mallon, Marichal, and Perrat 1939, pl. XLVII, 69).

Fig. 1.11. Luxeuil minuscule. France, probably Luxeuil. Early 8th cent. New York, Morgan Libr. MS. M. 17, fol. 37v. Reproduced with permission.

[omnibus seruus obedientiae mansuetudinem pacientiaeque | constanti | Qunato Si non solum inuriam inferat | null sed neque ab alio qui- dem sibimet inrogatum doleat | atque tristetur Sexta Si nihil agat nihil praesumat

Another, very graceful stylization of the Merovingian charter script, retaining much of its rapid quality, is the b script, so named because its b usually has a connective stroke to the right even when it is not ligated with the following letter. This type was probably developed in the middle or second half of the eighth century and perhaps in the nunnery of Chelles near Paris (cf. Bischoff 1968–69, 1:16–34; CLA, vol. 6xxvi–xxvii, nos. 719, 791).

Sharing the b with the vestigial connective stroke and surviving in even greater numbers than the Luxeuil type is the stylization known as the Corbie ab script. Its characteristic a, like contiguous ic, represents a freezing of the form the cc-like a sometimes assumed in ligature with a preceding letter. A combination of evidence connects the origin of this script with Corbie in the last decades of the eighth century; it would not entirely dis-

appear before ca. a.d. 830. (Cf. CLA, vol. 5, no. 554; vol. 6xxv–xxvi, nos. 743, 763, 792; Kirchner 1955, pl. 34; Mallon, Marichal, and Perrat 1939, pl. XLVI, 67; Steffens 1909, pl. 29a; and Bischoff 1990, 106, for references to articles ascribing the script to a nunnery near Corbie.)

The special attention accorded to the foregoing Merovingian scripts because they represent conscious styles surviving in multiple examples should not hide the fact that these types not only account for far less than a majority of the seventh- and eighth-century Merovingian manuscripts written in other than pure Roman scripts, but they do not even constitute the paleographically most significant ones. There existed a seemingly endless variety of scripts (illustrated passim in CLA), some representing simply careless and unconscious departures from previous norms, some representing eclectic fusions of elements from earlier scripts, and some representing groping attempts to fashion a minuscule script smaller and more economical than the Roman scripts and more legible than even the stylized Merovingian ones. These last efforts eventually culminated, perhaps beyond anyone’s intention, in the Caroline minuscule.

The Caroline Script

The Caroline Minuscule lasted more than four centuries in its original incarnation and then, largely as the result of its introduction into printing as the roman type font in the 1460s, has lasted almost six more centuries since it was revived by the Renaissance humanists around 1400. Optimists may regard it as one of humanity’s permanent acquisitions. Other Latin scripts may have lasted even longer, but no other has so long been so widely used. The earliest dated surviving examples of the script are found in a Bible copied at Corbie in the 770s at the order of Abbot Maurdran and in some dedicatory verses added to an Evangelistary copied in the entourage of Charlemagne between a.d. 781 and 783 (cf. CLA, vol. 6, no. 707; vol. 5, no. 681). From North France and the contiguous areas of Germany, where Caroline minuscule may have emerged in several places independently, the script rapidly spread over all but the southern extremes of the Carolingian Empire early in the ninth century. By the mid-ninth century it had almost totally supplanted all other text scripts within this area, including the Anglo-Saxon pointed script in Germany, for the copying of books. The abbey of Tours, whatever its role in the original development of Caroline minuscule, played an important part in this rapid dissemination. Surviving examples from the ninth century, which will be the subject of a much-awaited publication (cf. Bischoff 1963), approach 7,000, a quantum jump
beyond the number of Latin manuscripts surviving from all previous centuries combined. In the second half of the tenth century Caroline minuscule began to supplant the Anglo-Saxon script in England for Latin texts. In the late eleventh century it started to take the place of Visigothic minuscule in Spain. And it of course accompanied Western Christendom as it expanded into Northern Germany, Eastern Europe, and Scandinavia from the ninth century onward. On another front it was also replacing the pre-Caroline charter scripts that had descended from the later Roman cur- sive. The German royal chancery adopted the Caroline in the ninth century, the French adopted it in the early eleventh, and the papal chancery did the same in the early twelfth. Private charters in these regions were naturally using Caroline minuscule, though not exclusively, much sooner. The Caroline in charters, in contrast to that in books, was distinguished by longer ascenders often ending in fancy curlicues, by fancy abbreviation strokes, and sometimes by ligatures of ct, rt, and st exaggerated in breadth. Finally, starting late in the eleventh century or early in the twelfth, the Caroline minuscule of North France gradually began to turn into Gothic, and by the early thirteenth century the same transformation had taken, or was taking, place almost everywhere in Europe.

The predominant forms of the Caroline alphabet throughout its history are all, except for its long s, substantially the same as those of the modern roman type font. With respect to earlier scripts, they are most like those of half-uncial, differing only in a, e, and n (see fig. 1.12). Caroline minuscule’s internal unity does not mean, however, total uniformity in its appearance either through the centuries or throughout Western Europe at any one time. There were general, if minor, differences in size, in the ratio of breadth to height, in shading, and in slant, and particular differences in the forms of individual letters. Many of these differences do not, or only with difficulty, fit within any overall plan of development. In general, however, the Caroline letters over the centuries, at least outside Italy, underwent some lateral compression and as a result seem taller, they were written more compactly, and some of their curves gave way to angles. Caroline, in other words, was on the way to Gothic. The ducus of ascenders also changed. Instead of being formed, as they were in the ninth and much of the tenth centuries, by an overlapping looping stroke that began about mid-height and gave the ascender a club-shaped appearance, the ascenders were more and more being started at the top with a horizontal hair-line approach stroke which then turned downward.

In terms of individual letters Caroline minuscule had variant forms at both the beginning and the end of its original life span, forms that help to tie its history to both the preceding Merovingian and the succeeding

Gothic scripts. In its early phase the variants included the ce form of a rather frequently, the uncial d (i.e., with its ascender leaning or curved to the left), and capital N. In its late phase the variants included the round s at the end of words, v-shaped n particularly at the beginning of words, an oblique hair-line over certain l’s, and again the uncial d. In the eleventh century the letter w began to make its appearance. Changes in the treatment of the ae and oae diphthongs are also worth noting. In the ninth century the two letters were usually written out in full, though the e with cedilla, which is what remains of the e in ae ligature, continued in use from pre-Caroline times. The use of the e with cedilla increased in the tenth century and it prevailed in the eleventh. Then in the course of the twelfth century the cedilla began to be more and more often dropped in favor of simple e, and in the early thirteenth century it completely disappeared.

Caroline minuscule’s chief difference from the preceding Merovingian scripts was its elimination of most of the latter’s ligatures. The process of elimination was gradual and the point at which a script can qualify in this respect as Caroline is somewhat arbitrary. A few ligatures, in particular ct, cr, rt, and st, were never completely eliminated from the Caroline canon, although in the twelfth century the ampersand began to be replaced by the 7-like nota tironiana which itslarsc rites had long been using.

At the same time that Caroline minuscule was being perfected, the
old Roman scripts were undergoing refurbishment, mostly for use in titles and colophons but some of them also for use in texts themselves. Particularly noteworthy is the increased use of half-uncial for the first line or two of a new book or chapter in the important scriptoria at St. Amand, Tours, and other places under their influence. (Cf. Bischoff 1954; Bischoff 1966–81, 3:1–38; Bischoff 1974–80; Bischoff 1990, 112–27, 247–50, and pls. 12, 14; Autenrieth 1978; Bishop 1971; Concetti 1954–56, 166–205 with a bibliographical survey; CLA, vol. 6:xii–xxx passim; 10:viii–xix; Dufour 1972; D. Gane 1967; Garand 1980; Jones 1932; Ker 1960; Lowe 1969, 21–53; Marichal 1948, 63–64, 97–99; Rand 1929, 1934; Supino Martini 1987; Vezin 1974.)

Gothic Scripts

The geometric increase in manuscript production that accompanied the development of Carolingian minuscule was repeated with the development of the scripts called Gothic, a name used in its current meaning since the eighteenth century and originally coined by the Italian humanists as a term of opprobrium for scripts that they considered barbaric. The decisive factor in bringing about the new explosion in book production—the vast majority of extant medieval Latin books, to say nothing about documents, are in Gothic writing—was the educational revival of the twelfth century that issued into the first universities. By the year 1500 almost eighty of these institutions of higher education had been founded in Western Europe. The enormous appetite for books that they generated led, by the thirteenth century, to a more efficient method of book production. This was the _pecia_ or piece system (cf. Destrez 1935; Bataillon et al. 1968; and fig. 1.16 for a marginal _pecia_ indication) that enabled multiple copies to be made directly and simultaneously from a single authoritative or corrected exemplar of a book, thus promoting a combination of accuracy and speed. In the fifteenth century the universities contributed greatly to the economic viability of the new printing industry.

The transition from Carolingian minuscule to Gothic was so gradual and continuous a process, allowing for coexistence of the two species and of intermediate approximations, that the resemblance between the late Carolingian and the early Gothic can seem to be much closer than that between the early and late Carolingian on the one hand or between the early and late Gothic on the other (cf., e.g., _CMD-NL_, vol. 1, pls. 26, 92, 94, and 295). If Gothic prefers angularity to curves, height to width, and more rather than less shading, with the thickest stroke almost perpendicular to the horizontal writing line, and if it prefers uncial _d_ to Caroline _d_, round _s_ to the tall _z_ at the end of words, and _7_ to the minuscule _et_, then late Caroline was showing more and more of all these characteristics and sometimes more than some scripts that deserve to be called early Gothic. Even the breaking of shafts or minims to form angular or rectangular minuscules (see fig. 1.14)—which is usually considered the most characteristic feature of formal Gothic—is not entirely foreign to late Caroline. So obvious are the continuities that there has been a reluctance and sometimes even a reticence, from the time of Mabillon onward, to regard Gothic as a new type of script.

Whether or not Gothic is an essentially new script is a question of esthetic philosophy that can be left aside here. There is no question, however, that Gothic introduced something new, beyond increasing the number of letter parts by its angles and beyond the changes that late Caroline minuscule was already anticipating. These latter changes were all elements contributing to the formation of Gothic, but by themselves they did not constitute Gothic, nor did they obviously and necessarily lead to the formation of Gothic. For this, an esthetic leap was necessary, a conscious determination to tie the various elements at hand together in a comprehensive and systematic way. Conscious, comprehensive system and symmetry, which have more of the abstract and the mathematical than of the vital about them, may be said, though not without a touch of paradox, to be the very life of Gothic script. This emphasis upon the consciously systematic character of Gothic, without denying the importance of its angularity, verticality, etc., makes particularly useful as a practical test for separating beginning Gothic from ending Caroline the uniform treatment of the feet of all strokes standing or the base-line, including the feet of _f_ and long _s_ that had previously descended below the base-line (see fig. 1.13 and cf. Bischoff 1954, 11–14). This uniformity is more a sign of the self-consciousness essential to Gothic than it is itself an essential part of Gothic, since, as will be seen, there are scripts that receive the name Gothic and nevertheless do not observe this uniformity.

Uniformity in the feet of its minims by itself, however, qualifies a script only as early or primitive Gothic. Full-fledged Gothic must manifest more of the consequences of Gothic's angular esthetic. One easily recognizable sign of this, though its regular presence, too, cannot be made an absolutely essential part of full-fledged Gothic script, is the practice of fusing facing bows (now often become half hexagons), such as occur in contiguous uncial _d_ and _e_ (see fig. 1.14 and cf. Meyer 1897). When the rule was observed with complete consistency, every time _b_ uncial _d_ , _h_ , _o_ , _p_ , Gothic _v_ and _y_ , or the reversed-c abbreviation for _con_ was followed within the
same word by c, d, e, g, o, or q, the facing bows overlapped and usually shared a common stroke. The vast majority of Gothic scribes observed this rule from the thirteenth to the fifteenth century and beyond, but only a small minority of them did so with complete consistency. Examples of its observance can actually be found as early as 1146 (cf. Gasparri 1973, 115) and 1162 (cf. CMD-F, vol. 2, pl. XXA).

Hand in hand with the fusion of facing bows in Gothic went the development of a ligature of r with a preceding letter ending in a bow, namely, b, uncial d, h, o, p, v, and y (see figs. 1.14, 1.15, 1.19). This development was a systematic extension of a ligature of R with a preceding O that was occasionally used at the end of lines in uncial script (cf. faces in CLA, vol. 2, nos. 126, 193) and that was taken over by Caroline minuscule. The 2-like part of the R that did not overlap the preceding bow eventually began, starting sporadically in the later thirteenth century, to be regarded as a complete r by itself, so that it could be used independently of a preceding bow (cf. fig. 1.22, where it is carried over into humanistic cursive).

Recently (cf. Zamponi 1988) attention has been called, on the basis of a study of various volumes of CMD, to still another characteristic of the more formal Gothic script. This is a tendency, sometimes a rule, starting in the twelfth century and continuing into the sixteenth and especially in Italy, to slide the angular or rectangular finial of the first minim or upright of a letter (i.e., in m n p r t u) with the final horizontal stroke of a preceding f g r t (sometimes also c e and x) (see figs. 1.14, 1.15, 1.16).

Despite rather general agreement that the graphic features just discussed are basic to Gothic script, it remains true that the name Gothic is commonly applied to scripts that not only lack some of these features, but also possess others at odds with them. Because this situation leads to confusion about the nature of Gothic and the ways in which it is possible to share in that nature, there is a need for a comprehensive reconsideration of the whole problem. Until this is done, however, there is much practical value, despite the objections that scholars have raised (Gumbert 1974, 199–214, has answered them), in the classification and nomenclature of Gothic book scripts proposed by Lefltinck in 1954 as a result of his study of the scripts used in the Lowlands. He suggested a first division, on the basis of objective criteria, into three types: textual, bastard, and cursive. The term hybrid was later substituted for bastard (cf. CMD-NL, 1:xx–xvii). Within each of these types he then proposed a further threefold subdivision, depending on whether it was formal (formalis), current or rapid (currents), or midway between these two extremes. These further subdivisions, which Gumbert (1974, 205, 215–33) would prefer to call
levels (niveaux) with qualitative elements, are based on more subjective criteria. The final result is nine subdivisions of Gothic book scripts describable as follows: (1) formal or calligraphic textual, (2) (ordinary) textual, (3) current textual, (4) formal hybrid, (5) (ordinary or what Lieftinck would call) textual hybrid, (6) current hybrid, (7) formal cursive, (8) (ordinary or what Lieftinck would call) textual cursive, (9) current cursive. Among the three main divisions the textual enjoys a privileged position, both by virtue of its more thoroughgoing realization of the Gothic aesthetic ideal and by virtue of its priority in time. And among the subdivisions of the textual type the formal enjoys a privileged position (see fig. 1.14). This is Gothic par excellence, the kind that the mere mention of the word Gothic evokes in the imaginations of those who have seen the deluxe manuscripts of the later Middle Ages, and it is also the kind to which what has so far been said here about Gothic primarily applies. The formal textual, which evolved out of the ordinary textual, reached its acme, both in stylistic perfection and in frequency of use, in the thirteenth and fourteenth centuries. Its contemporary names, littera psalterialis or missalis, indicate that even in this period it was used primarily for sumptuous liturgical books. By the fifteenth century its use was being reduced by the development of new formal scripts, but it was not extinct even in the sixteenth century. In fact, thanks to its adoption as the model for the first printing fonts, it is still in use today for the printing of vernacular German literature and of newspaper titles.

The ordinary Gothic textual (cf. Lieftinck 1954, figs. 14, 15, 18, 29b, 30) has a greater range of variation than the formal. In general it includes scripts that were written with more speed and less care than the formal, or with less thoroughness and consistency in observing the rules that the formal Gothic observed. Complete uniformity in the treatment of the feet of vertical strokes and in the angling of curves may not have been attempted, much less attained. Sometimes the difference between the formal and the ordinary may have been partly the result of the letters being written on such a small scale that the Gothic angles were inevitably stilled. This is true of a large group of manuscripts, mostly pocket-size Bibles produced in France in the thirteenth century, of which the miniature Gothic textual has been given the special name of pearl script (cf. facs. in Degering 1929, pl. 81; CMD-F, vol. 5, pl. XXIIib; vol. 6, pl. XXa; Stiennon 1973, 247).

Among other manuscripts in the ordinary textual category are many of those copied by professional scribes for various university communities (see figs. 1.15, 1.16), particularly the ones in the littera Parisiensis or Parisian script (cf. Destrez 1935, pls. 1-18; Kircmar 1966, pl. 18; Steffens 1909, pl. 98). By the mid-fifteenth century the ordinary textual, long used much more frequently than the formal, was having more and more of its functions taken over by cursive and hybrid scripts to be treated below.

The third kind of textual, namely the current (cf. Lieftinck 1954, fig. 16), which was characterized by being written with more rapidity than the ordinary, had an even shorter life span. Its purposes were beginning to be...
served by cursive scripts already in the late thirteenth and early fourteenth centuries.

Before these Gothic cursive scripts are discussed, however, a few words must be said about another kind of Gothic textual, namely the *rotunda* or round type characteristic of Italy, but also used in South France, Spain, and Portugal (see fig. 1.16, and cf. Canellas 1974, vol. 1, pl. XLIX; vol. 2, pls. XLVIII–LII; Kirchner 1955, pls. 43–44; Kirchner 1966, pls. 13, 23; Steffens 1909, pl. 106; Thomson 1969, pls. 75, 77). It is often referred to as the *littera Bononiensis* or Bolognese script, because its most characteristic form seems to have originated at Bologna and it was certainly widely used there for making ordinary and deluxe copies of the legal texts needed for the studies at the university (cf. Paglin 1933–34; Destrez 1935, pls. 19–26). A very formal version of the script continued to be used for liturgical manuscripts into the sixteenth and seventeenth centuries and for giant choral books even much later. This script, despite its name, does not lack angles, but because its letters are broader in relation to their height than they are in the more northern Gothic, the angles are softened, and by comparison the impression is roundish. Characteristic is the uncial *d* with a full bow and a short ascender lying almost horizontally to the left. The round Gothic also treats the feet of vertical strokes differently. In the more formal Italian examples of the script the feet of *f*, *h*, the first two strokes of *m*, the first stroke of *n*, *r*, and tall *s* are flat. The Gothic of more northern regions was also sometimes written with flat feet or *sine pedibus*, but the strokes so treated (cf. Kirchner 1966, pl. 11a) were not the same ones as in the round Gothic. A reversed *c* used as an abbreviation stroke for *-bus* and *-que* is another characteristic (see fig. 1.17, lines 1, 8).

Long before the Caroline minuscule was being transformed into the Gothic textual, it had already been adopted as a charter script (cf. preceding section). The charter features that I assumed in the process of adoption (cf. Steffens 1909, pls. 78b, 80–82, for twelfth-century examples) were superficial in terms of affecting the basic form and ductus of the letters, and they could be, and were, easily discarded. In the course of the thirteenth century, however, a more fundamental change ensued. The charter script was transformed into a new cursive unrelated to the later Roman cursive. The transformation, which took place everywhere but at different rates of speed, was well under way in an imperial register of 1240 and continued into the sixteenth century and later (cf. Steffens 1909, pls. 92, 96a, 97, 100, 105a, 107–8, 115b, 118b, 119–20, 123a), but rarely was it carried through with total thoroughness and consistency. The most characteristic among the new cursive features were the loops on the ascenders of *b*, *d*, *h*, and *l* and (less frequently) on the descenders of *f*, *p*, *q*, and long *s*.

Although the loops themselves often did not connect with the adjacent letter or even facilitate the making of the strokes within the same letter, it was becoming more and more common for several letters or even a whole word to be written without the pen being lifted from the writing surface and also for abbreviation strokes to be written the same way. Among individual letters that assumed characteristic forms with more or less regularity, attention should be called to *a*, *g*, *m*, *n*, *r*, *s*, and *u*. The *a* lost that part of its stem that extended above the bow in the Caroline or uncial form. The *g* had its ductus simplified, in comparison with the Gothic textual *g*, by a reduction in the number of strokes. The *m*, *n*, *r*, and *u* began to have the bottom of their first stroke (also the second in the case of *m*) continued to the top of the following stroke by an oblique hair-line. The final stroke of *m* and *n* at word-end was often extended below the base-line. The round *s* at word-end, probably under the influence of the new appearance that the letter was assuming in Gothic textual, frequently received a new and simpler ductus that made it look like minuscule *b*. The v-shaped *u* at the beginning of words often had the first stroke extended above the head-line.

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Fig. 1.17. Gothic textual (line 3) and current cursive (lines 1–2, 4–8). Germany. 14th cent. The author's collection.
and projecting or even looping to the right—so that it also resembled ɔ.

If there is some difficulty, because of the variety and irregularity of this documentary script, in determining when it has been transformed enough to deserve the name cursive, there is likewise some difficulty in determining when, if ever, the cursive became Gothic. Because there is no room to discuss this latter difficulty here, it is simply being assumed that there is some way in which this cursive can validly qualify as Gothic, even though it clearly cannot do so in the same way as the textual does. Whether or not this assumption can be justified, the fact remains that the most important development in the history of Latin scripts in the fourteenth and fifteenth centuries, apart from the introduction of the humanistic ones, was the ever-increasing use of the new documentary cursive for the copying of books.

At first it was introduced with little modification and the results may be described as current Gothic cursive (see fig. 1.17, and cf. Lieftinck 1954, fig. 20) or, if more regularity and deliberation are evident, as ordinary or textual Gothic cursive (cf. Lieftinck 1954, figs. 19, 21, 23). An example of a characteristic English version of this Gothic cursive, which shows a number of Gothic textual features and to which the name Anglicana has recently been applied, survives in a book from the year 1291 (cf. Parkes 1969, xvi, pl. 4, i; Kirchner 1966, pl. 37a). The development of a formal or calligraphic Gothic cursive, for which the name bastardas has often been used, was already well under way in Italy in 1337 when the famous hundred copies of Dante's Divine Comedy were being made (cf. Steffens 1909, pl. 103; Lowe 1969, pl. XIX). Elsewhere the formal Gothic cursive emerged only towards the end of the fourteenth and the beginning of the fifteenth century (cf. Lieftinck 1954, figs. 22, 24). A variety called the secretary script was very successfully introduced into England from France in the late fourteenth century, first for documents and then for books (cf. Parkes 1969, xix–xxii). Eventually it entered into mixtures with Anglicana (see fig. 1.18, where the Anglo-Saxon thorn occurs). In the formal Gothic cursive, curving strokes and in particular the characteristic loops on ascenders had an increasing tendency to become angular. That this formal script, which was employed for de luxe books commissioned by and for royalty, should have tolerated and even flaunted its loops—something totally unprecedented in the history of Latin book scripts—cries out for explanation.

Eventually the formalizing of the Gothic cursive went so far in the Lowlands and North France, probably under the influence of the formal textual, as to eliminate at least most of the cursive's characteristic loops. The change seems to have gotten under way around 1440 in the deluxe manuscripts copied under the patronage of the duke of Burgundy and the resulting script has recently been named Burgundian (see fig. 1.19, and cf. CMD-NL, lxv, xvi, and pl. 271, 274, etc.; also Lieftinck 1954, 23, 28–29, and fig. 25).

Fig. 1.18. Gothic cursive (mixed Anglicana and secretary). England. 15th cent. Department of Rare Books, Cornell University Library. MSS. B 41, fol. I r. modet (and) scyde [Der moder yt is nowe tyme that] | I go to gloryse (and) make known my fader (and) also | to schewe myself to the worlde (and) to worche the saluation of mannes soule as my fader hathe ordeyned | and sent me into this world for this end wherfor

![Fig. 1.19. Formal Gothic cursive (almost Burgundian). Clairvaux, France. A.D. 1485. Princeton Univ. Libr. MS. Garrett 91, fol. 178v. Reproduced with permission.](image)

Explicit Benedictus | deus qui inter tot | et varia impedime(n) | ta dedit nobis hoc opus p(er)fec-[te] ... tuas in hoc laborioso opere principali(tis) suscepimus, et cui(us) adiutus ... co(n)-su(m)ma(ium) usus, | tuus tuoru(os)(us) fratum or(ai)onibus

While the Gothic cursive was becoming more formal, there was a corresponding movement of the Gothic textual towards the cursive. In terms of specific letter forms, this meant the adoption of the simplified forms of a and g and of round s at word-end and the abandonment of the angular feet on f and tall s which were then extended below the base-line. The resulting script, now known as Gothic hybrid, did not adopt loops on ascenders, but it often treated the bottoms of verticals as they were treated...
in the Gothic cursive, this hybrid script was written with varying degrees of formality, which may, like those of the Gothic textual and cursive, be loosely classified under the three categories of formal (see fig. 1.20 and cf. Lietifinck 1954, fig. 26, where the script is still called bastardy; and CMD-NL, vol. 1, pls. 202–3), ordinary (cf. Lietifinck 1954, figs. 29a, 30; and CMD-NL, vol. 1, pls. 207–8, 213–14, etc.), and current (cf. Lietifinck 1954, fig. 32, where the script is still called bastardy currens; and CMD-NL, vol. 1, pls. 200, 205, 210–11, etc.). When the hybrid exempted other letters besides f and tall s from observing the fœt rule for Gothic textual, it can be difficult to distinguish from Burgundian. The temporal and geographical limits of this hybrid Gothic have not yet been thoroughly studied. It may have fourteenth-century Italian ancestry, and it was used in Catalonia and in the southern half of France in the fifteenth century (cf. CMD-F, vol. 1, pl. 88b; vol. 6, pl. 138c). Its center of gravity, however, seems to have been in the lower Rhineland, where it was cultivated from the early fifteenth century and whence it spread into neighboring regions of Germany, France, and the Lowlands. It continued in use well into the sixteenth century. (Besides works already referred to, cf. Chaplais 1971; Dobiache Rojdestvensky 1925; Heinemeyer 1982; Johnson and Jenkinson 1915; Mazal 1975; Newton 1971; Spilling 1978; Wright 1960.)

Because the humanistic scripts are in some sense the graphic expression of their inventors' and users' hostility to medieval culture, there might seem to be good reason, despite the considerable chronological overlap between the appearance of these new scripts and the disappearance of the Middle Ages, for not treating these scripts within an introduction to medieval paleography. They will, in fact, not be treated here at any length, but it is impossible to ignore them completely and for at least three reasons: (1) because many of the texts copied in these scripts were as "medieval" as they were "post-medieval"; (2) because an adequate practical command of the original Caroline minuscule demands that one be able to distinguish it from the form revived by the humanists; and (3) because an understanding of the later history of the Gothic scripts requires some understanding of the competing scripts that contributed to their decline. In a practical approach to paleography the third reason is insufficient, but the first two reasons easily suffice by themselves.

Of the two main humanistic scripts, one more formal and the other more cursive, the more formal takes precedence in time, if not necessarily in lasting effect. This script (see fig. 1.21), which has often been called without further qualification the Renaissance or humanistic script, which is today more frequently called the humanistic round or textual script or the formal humanistic, and which the humanists themselves called the antiqua or the new antiqua (cf. Batteli 1954), is none other than a revival of the Caroline minuscule. The invention, or revival, of the script is now regarded as the accomplishment of Poggio Bracciolini (1380–1459) and

Fig. 1.20. Formal Gothic hybrid. Probably Flanders. A.D. 1528. Department of Rare Books, Cornell University Library. MS. BX C36 H484, fol. 30r.

principio et unus et semper et in secula seculorum amnis alleluia. ymnus. memo salutis aucto quod nostri quondam corporis ex ira libata virgine nascente forma suum seris gloriae tibi datus qui natut est de virgine ui patre et sancto spartu fuit deplorata terra. in ore. te leuaui oculos meos. quia habitas in celis esse fuerat.

Fig. 1.21. Humanistic round. Italy. A.D. 1456. Princeton Univ. Libr. MS. Grenville Kane 55, fol. 78r. Reproduced with permission.

Bellisarius, magna lectori a lustiniano susceptor plurimoque in honore habuit, omne quem de se prius habita fuerat suspitionem deleuit. Gothi etiam quos secum adduxerat, humane benigneque

secum adduxerat, humane benigneque
perhaps Niccolò Niccoli, achieved in Florence in the very last years of the
fourteenth century (cf. Billanovich 1981; de la Mare 1977; also Ullman 1960,
21–57, and figs. 13–27, who argued for 1402). Poggio, a Florentine notary
who became a papal secretary, had predecessors in expressing dissatisfac-
tion with the legibility of the Gothic script, most notably Petrarch, who
himself used a rather clear Italian form of Gothic textual (cf. Petrucci 1967;
Ehrle and Liebert 1932, pl. 45, where it is called fere humanistica; Foerster
1953, pl. 21; Kirchner 1955, pl. 48; Kirchner 1956, pl. 27; Steffens 1909,
pl. 101; Thomson 1969, pl. 71), and he may also have profited from the
inspiration of Coluccio Salutati (cf. Ullman 1960, 11–19). It is somewhat
ironic that the earliest and strongest reaction against the Gothic should
come have in Italy where its illegible possibilities were far less cultivated
than in northern Europe. The specific Caroline manuscripts serving as
models for Poggio’s revival, insofar as there were specific models, have not
been identified, but the elements of his script can be found in Italian
manuscripts of the tenth to twelfth centuries (cf. Ullman 1960, 54, and
pls. 1, 18; de la Mare 1969, xxiii; de la Mare 1977; CMD-IT, vol. 1, passim).
Long neglected by scholars, the humanistic round has become the subject
of intense and very fruitful investigations by Ullman, de la Mare, and others,
but much more study is still needed on the further development and spread
of Poggio’s invention before the patterns of development will be wholly
clarified. It is already clear that there was more than one pattern.

The practical problem of distinguishing the humanistic round from the
original Caroline of the tenth to twelfth centuries is often eased by a
considerable difference in shading and proportions. When this is not the
case, the presence in a Caroline-like manuscript of codicological features
introduced in the Gothic period or at least widely used only from the Gothic
period onward, for example, paper for writing material, ruling with ink,
etc., can be very convincing evidence that one is dealing with the human-
istic round and if the manuscript contains a text not composed before the
later thirteenth century the evidence is of course foolproof. But even when
the general impression given by the script is somewhat different from that
of the later Caroline, it is still reassuring to find individual graphic
elements that reveal, either inadvertently or by design, a touch of Gothic in
the script’s past. Among the Gothic elements occasionally carried over
onto the humanistic round, and not only at the beginning of the fifteenth
century, are fusions of facing bows, uncial d, plain e instead of e with cedilla
for the ae diphthong, f and tall s standing on the base-line rather than
extending below, r in ligature with a preceding bow in letters besides o or the 2-shaped part of the R in ligature used as an
independent letter, round s regularly at word-end, t with its vertical stroke
projecting well above the horizontal, and v-shaped u regularly at word-

beginning. Some of these elements have to be used with caution, of course,
since although they are characteristic of Gothic they were already begin-
ning to appear in late Caroline and hence their presence may suggest an
anticipation as well as a remembrance of Gothic. At least two of these
elements, however, namely the dotted i and the 2-shaped r used as an
independent letter, did not occur at all in the original Caroline minuscule.

Added assurance that one is not dealing with a manuscript in later Caro-
line minuscule can be derived from the presence of Roman capitals, particu-
larly square capitals, modeled on ancient inscriptions (see fig. 1.2) in titles
and colophons. These ancient capitals were introduced by Poggio (cf. Ull-
man 1960, 54–56) and their use was continued by others (cf. Meiss 1960).

Much of the significance of Poggio’s invention accrued to it as a result of
its unforeseen adoption as a model for printing fonts, starting with Con-
rad Sweynheym and Arnold Pannartz, the Germans who introduced print-
ing to Italy in 1465. By the mid-sixteenth century this roman type, as it
is called, had replaced the Gothic fonts not only in Italy and Spain but
also in France, and it had done the same in England and the Netherlands
by the end of the sixteenth century and in Scandinavia in the course of
the nineteenth. In the twentieth century almost the only exception to the
universal sway of the roman type wherever the Latin alphabet is used is in
German-speaking lands where the Gothic fonts continue to serve for
printing belles lettres, school and devotional books, newspapers, etc.

The other kind of script widely cultivated by the humanists, what is
usually called the humanistic cursive (see fig. 1.22, and cf. Battelli 1954,
40, and figs. 38–41; Ullman 1960, 55–77, and figs. 29–39, 50, 66; Wardrop
1963), tolerated a wider margin of variation than the round. In part this
was because it did not have an authoritative canonized ancestor, such as
the round had in Caroline minuscule, to impose limits on variation. But

![Fig. 1.22. Humanistic cursive. Italy. Ca. A.D. 1500. Department of Rare Books, Cornell University Library. MSS. Bd. Petrarch P P49 R4++., fol. 2r.](image-url)
it was also the result of the fact that this cursive was used for a wider variety of purposes, namely for documents (where the results have been called the humanistic chancery script) and for scholars' correspondence, notes, and private writing, as well as for books copied with varying degrees of formality.

The forms of many of the letters seem to result from speedier copying than was used in writing the round, for example, the form of m is conducive to, and doubtless results from, being written in one continuous movement of the pen. But the script does not have the loops on ascenders and descenders that are characteristic of cursive, and in books the connecting of one letter to another, aside from some common ligatures (ct, et, st), is perhaps more often the exception than the rule (cf. fig. 1.22 and Fairbank and Wolpe 1960, pl. 11, for exceptions). For these reasons some would prefer to call this script italic—the name applied to its printed version (cf. Cencetti 1963, 85; de la Mare 1969, xxix–xxx). The humanistic cursive used little shading, it normally leaned to the right, and by comparison with the round it was angular. With regard to individual letters, characteristic ones besides the cursive m (and n) were the simplified a, Caroline d, and f and long s descending below the baseline.

The invention of the script is now dated in the 1420s and is ascribed to the Florentine humanist Niccolò Niccoli (1364–1437) (cf. Ullman 1960, 59–77). The hand that has been identified as Niccoli's (cf. Ullman 1960, figs. 29–39; Fairbank and Wolpe 1960, pl. 2c) was succeeded, starting in the 1430s, by far more formal examples (cf. de la Mare 1969, xxvii).

Although the humanistic cursive got started later than the round and was introduced into printing, where it would become known as the italic font, only in 1501 (cf. Wardrop 1963, 35), its influence on modern handwriting in contrast to modern printing has probably been much greater than that of the round. It gradually became the dominant script in the lands that adopted the round for their printing. By the mid-sixteenth century it was predominant in Spain, by the early seventeenth in France, by the mid-seventeenth in England and the Lowlands, and during the nineteenth in Scandinavia. Only German-speaking lands had not succumbed to its charms by the twentieth century (cf. Steffens 1909, pp. XXIV–XXV). (Cf. also Bischoff 1990, 145–49, and pls. 22–23; Derolez 1984; Fairbank and Hunt 1960.)

Modern Scripts

The continuations, further developments, and transformations to which Gothic and humanistic scripts were subject in modern times should be of almost as much interest to medievalists as the original development of these scripts. Medieval documents are sometimes preserved only in modern copies, and these copies are often no easy to read. Indications of medieval influence on later thought can sometimes be found in the annotations entered in modern manuscripts by modern scholars. The evidence needed for tracing the provenance and later history of medieval manuscripts is often available only in ownership marks or other notes entered in modern scripts. But if it is easy to demonstrate the importance to a medievalist of a knowledge of modern scripts, it is far less easy to supply the needed knowledge. The field is vast and much of the ground has still to be cleared. Paleography may embrace all writing up to the present day, but paleographers have been slow and reluctant to face up to their duty. All that can be offered here, therefore, is a short list of works containing facsimiles, and preferably also transcriptions, of these modern scripts.

Among the paleographical works of general interest, there are valuable sections on modern scripts in Degering (1929); Prou (1924); Reusens (1899); Steffens (1909); and Thompson (1912). The various series of dated manuscripts will all eventually deal with manuscripts into or through the sixteenth century, though they do not provide transcriptions for their numerous plates (cf. CMD). Among works of interest for individual countries, cf. for France: Poulle (1966); Samaran (1922); for Germany: Dulfer and Korn (1967); and Mentz (1912); for Great Britain: Dawson and Kennedy-Skpton (1966); Hector (1966); Jenkinson (1927); Pettigrew (1977); and Simpson (1973); for Ireland: O'Neill (1984); for Italy: Battelli (1963); and Federici (1934); for the Netherlands: Horsman et al. (1984); and for Spain and Portugal: Avelino de Jesus da Costa (1990); Arribas Arranz (1965); Canellas (1974, vol. 2); Millares Carlo with Ruiz Asencio (1983) and with Mantecón (1955); and Nunes (1969).

ABBREVIATIONS

According to a frequently cited admission of Ludwig Traube, one of the giants in the history of paleography, whenever he wanted to know the date of a manuscript the first thing he turned to was its abbreviations. Abbreviations can also be helpful in determining a manuscript's place of origin. But regardless of their usefulness in these respects, there is no question that the most important knowledge one can have about abbreviations is how to expand them correctly.

Abbreviations make paleography's interrelationship with philology particularly clear, since in the final analysis how an abbreviation ought to be
expanded depends on what the context calls for in the way of meaning. Expanding abbreviations is not a totally exact science, but it is far from being an arbitrary exercise. Rules, of which a systematic exposition has been given by Schiaparelli (1926) (cf. also Laurent 1939 and Bischoff 1990, 150–68), presided over the formation of abbreviations, and knowledge of the history of these rules can greatly aid both in correctly expanding abbreviations and in using them for dating and placing purposes, even though it cannot eliminate all need for memorizing individual abbreviations and for understanding the context in which they occur.

Most abbreviations consist of one or more of the letters of the word being abbreviated and a sign of some kind indicating the omission of the others. Some abbreviations, however, consist of a conventional symbol unlike any letter in the word being abbreviated, though perhaps originally deriving from a shorthand version of one or more of the letters involved (cf. the 7-like sign for at in fig. 1.7). Of the alphabetic kind of abbreviations, most are either suspensions (i.e., they consist of the first letter or letters of the word being abbreviated, with a subtype called syllabic suspensions consisting of the first letter of each syllable) or contractions (i.e., they consist of the first and last letter or letters and possibly others in between), although other variations are not unusual. The fact of abbreviation is usually indicated by a point or loric by variations of each or by combinations of both. It may also be indicated by one or more letters, usually the final ones, being placed above and slightly to the right of the beginning ones (see figs. 1.15, 1.17). More extreme forms of abbreviation, known as notae tironianae from Cicero's secretary Tiro, one of the reputed inventors of this ancient system of shorthand, were used as late as the eleventh century. The 13,000 or so Tironian notes can be studied in the works of Kopp (1965), Chatelain (1900), Schmitz (1853), and Ruess (1914) (cf. also Steffens 1909, pl. 56, and Bischoff 1990, 80–82).

The most useful guide to the expansion of abbreviations, a vade mecum for every student of paleography and every editor of ancient and medieval texts, has been provided by Cappelli (1929). However, even though this handy and invaluable repertory contains facsimiles and expansions of more than 14,000 abbreviations, besides numerous conventional symbols and epigraphical sigla, the student will still find it far from containing every abbreviation that he encounters. Some supplementary material is available in Pelzer (1966), Martin (1910), and Prou (1924).

The date that Cappelli supplies with each abbreviation is not a dependable criterion for dating the manuscript in which it is found. The abbreviation was undoubtedly used at the date assigned, but it may have been used centuries earlier or later as well. For dating and placing purposes in the earlier Middle Ages one must consult Traube (1907; 1909–20, 1:129–56), the pioneering works in this area, Lindsay (1915), Bains (1936), and Paap (1959). For the later Middle Ages the preliminary studies have yet to be made and their accomplishment is hindered by the vastness of the material to be surveyed and by the migrancy of scribes and of manuscript models (cf. Bozzolo et al. in Actas 1990, 17–27). In any event it is important to remember, when interpreting the evidence of abbreviations, that nothing prevents an abbreviation, of which the origin can be dated fairly closely, from remaining in use for centuries or from being revived after a period of disuse. Normally, therefore, an abbreviation form with a known date of origin can provide no more than a terminus ante quem non. Thus the presence of the 2-shaped symbol instead of the apostrophe for the ur-ending argues that the manuscript was not copied before the end of the eighth century, but any time thereafter is possible. It is worth noting, however, that the form of this 2-shaped sign changed with time and place and these changes may themselves be revealing. (Cf. similar differences in the form of the 7-shaped symbol for et and ara in figs. 1.14–18.) Also, nothing prevents abbreviations that originated in and were characteristic of one region from being transplanted to another region. Finally, one must remember that the absence of abbreviations need not mean ignorance of them. A scribe's full repertory may emerge only when space is extremely short.

**NUMERALS**

Numerals may be regarded as conventional nonalphabetic abbreviation symbols, like the division sign for et. Not even the Roman numerals, except for C and M, have any Latin alphabetical connection despite the eventual coincidence of their forms with the letters I, V, X, L, D. The dates of invention or introduction of the Roman and Arabic numerals provide termini ante quos non and a knowledge of the varying forms these numerals assumed over the centuries can be helpful for dating and placing as well as indispensable for correctly transcribing. The tables in Hill (1915) are especially useful. (Cf. Cappelli 1929, 413–28; Steffens 1909, XXXV–XXXVI, XL, with references to his plates; Bischoff 1990, 176–77; and fig. 1.17 for Arabic 3, 4, and 5).

**PUNCTUATION**

Although punctuation consists mainly of minutiae, it is far from being a small subject. Not only does it include signs establishing the author's
real or presumed meaning (the equivalents of the period, colon, semicolon, comma, question mark, etc.) as well as corrector’s signs bringing what the scribe (or author) actually wrote into line with what the author had intended (i.e., the equivalents of signs for deletion, omission, insertion, transposition, etc.), but it may also include signs expressing a reader’s reactions to what he has read (attention, approval, disapproval, etc.). The subject is both vast and important, but nevertheless has received relatively little paleographical attention. The literature has been surveyed by Moreau-Marichal (1968) and Raffi (1968) (cf. also Bischoff 1990, 169–73). The neglect of this subject has been encouraged by the overwhelming profusion of material and also by the complications introduced when punctuation was supplied or modified by later readers, complications which photography, especially black-and-white, sometimes compounds rather than resolves. The interest that editors of texts might be expected to show in the study of punctuation tends to be undermined by the fact that successive copies of a work are more and more likely to reflect the scribe’s system or lack of system rather than the author’s (if there is a difference between the two). What is a discouragement to the editor, however, ought to be an encouragement to the paleographer.

In “reading” or determining the meaning of punctuation so it can be transcribed into its modern equivalents, the context must be consulted even if the scribe was using signs prescribed by the grammarians, since he may not have been using these signs with their recommended meaning. The most famous of the grammarians’ prescriptions, namely those found in Isidore of Seville’s Etymologiae (Bk. I, chap. 20; cf. also chaps. 18-19, 21, and II, chap. 18), called for a point at the base-line for the modern comma, at mid-height for something like the semicolon, and at the head-line for the period.

In the oldest Latin writings punctuation was hardly used, except for a point to separate words. Even in manuscripts of the fifth and sixth centuries punctuation consisted of little more than indentation, blank spaces, and occasional points (cf. Müller 1964; Wingo 1972). Blank space, though it is hardly mentioned in the grammarians’ theories, was used for punctuation or in lieu of punctuation in all periods. St. Jerome introduced a system of spacing and indentation to separate cola et commata in his translation of the Bible (cf., CLA., vol. 2, no. 141, for a facsimile). The separation of words by blank space was encouraged by those, such as the Irish and English, for whom Latin was not a native tongue. Nevertheless, prepositions were often not separated from the noun they governed well into the twelfth and thirteenth centuries. An increasing use of punctuation, in an almost bewildering variety of combinations, occurred in the seventh and eighth centuries. The rules handed on by Isidore, already used for some deluxe copies of classical texts in the fifth and sixth centuries, were observed in various scriptoria in Germany and France in the ninth century and for deluxe liturgical manuscripts in the tenth and eleventh centuries (cf. Bischoff 1990, 169). A new system of punctuation was adopted in the twelfth century by the Cistercians for their table reading and later by the Carthusians, Dominicans, and Brothers of the Common Life for their liturgical books. It called for a 7-like sign over a point (punctus circumflexus or simply flexus) after incomplete meanings, a tick or reversed comma over a point (punctus elipticus or matrum) after fairly complete meanings to which something could still be added, and a comma below a point (versus) after complete sentences (cf. Hubert 1970, 160–65; Ker 1960, 58–59; Gumbert 1974, 159–69; Bischoff 1990, 170–71). The simple point sometimes served for the circumflexus or versus. It may be worth noting that a manuscript copied entirely in one style of script may reveal more than one system of punctuation or even the lack of any system at all.

If the invention of a given punctuation mark can be exactly or even approximately dated, its presence in a manuscript can furnish at least a rough terminus ante quem non. No exactly dated original question mark, for example, has been documented before the 770s (CLA, vol. 6, no. 707, provides a facsimile; cf. also Steffens 1909, pl. 46, col. 2, lines 27, 40; Vezin 1980). The hyphen began to come into common use only in the eleventh century, though some stray examples survive from as early as the eighth century in England (cf. CLA., Suppl., nos. 1,679, 1,703; Vezin in Scriptorium 19 [1965]: 86). The use of parentheses is attested in the fifteenth century and probably does not antedate the late fourteenth (cf. Roncadella 1941).

Although the mere presence of a mark of which the invention goes back to Antiquity—such as paragraph signs and citation marks—is of little value to the medievalist as a terminus ante quem non, the varying forms these marks, as well as those invented later, assumed over the course of centuries can be of considerable help in both dating and placing, as preliminary studies of some of them have a ready shown. On paragraph marks cf. Lehmann (1959–62, 4:9–11, and facs. on p. 21); Sorbello (1944); on citation marks cf. McGurk (1961a); and on omission and insertion marks cf. Lowe (1972, 2:349–80 and pls. 61–70).

ON READING, TRANSCRIBING, AND DESCRIBING MANUSCRIPTS

A paleographer need not make a transcription of a text in order to come to an opinion about the nature and origin of its script, but an opinion
usually implies that the text has been read, entirely in the case of short ones and in at least extended representative sections in the case of long ones. Reading, in turn, implies that the paleographer ought to be able to transliterate the writing of the manuscript into the current alphabet and to show others how to do the same. Even though reading may be dismissed as merely a preliminary, and transcribing as an incidental, paleographical operation, they still may be very difficult ones and not only in the case of palimpsests (see below under Writing Materials) and shredded papyri but even in the case of manuscripts that are wholly intact. It has been said that paleography has essentially solved all its reading problems, but if this is true it is so only in principle, not in practice, even for the most experienced paleographers. And each student must of course gradually master both the principles and their application anew. Because of real difficulties in some texts, beginners can become justifiably discouraged, but they should not become discouraged too easily and regard as insuperable even those problems that can certainly be overcome with simple patience and persistence, together with a command of the language, subject matter, and abbreviations in question. Several cursory attempts at transcription, perhaps separated by enough time to give one a fresh perspective and in which only familiar letters and words are noted, will usually provide a sufficient command of the scribe’s habits — his letter forms, ductus, ligatures, and other idiosyncrasies — to make possible the decipherment of what was not immediately apparent. Because facsimiles and transcriptions of similar scripts can be of the greatest help here, the accompanying bibliography emphasizes comparative material of this kind and calls special attention to it. For texts that must be eked out letter by letter, a work like Grandenwitz (1904) may be useful.

Because transcribing is sometimes rendered more complicated by the revisions that a manuscript has undergone, a system of conventional symbols has been devised to simplify recording and distinguishing both the primitive readings and the revisions they received before leaving the original scriptorium (cf. Masai 1950b). The application of a revised version of these symbols may be observed in Vanderhoven and Masai (1953) and in CMD-B. The system, which employs square brackets for deletions, various combinations of oblique lines for additions, a combination of deletion and addition signs for substitutions, and parentheses or underlining or italics for letters expanding abbreviations, was originally intended to facilitate the publication of diplomatic editions (on these cf. also Falconi 1969), but it can be useful as well both for recording transcriptions of texts to be used in constituting a critical edition and simply as a way of accurately preserving a text for (later) personal consultation, particularly if angular or

other kinds of brackets are introduced for recording later alterations and the transcriber’s own comments. For the conventions recommended to be followed in the making of critical editions of classical and medieval texts, cf. Bidez and Drachmann (1932) and Dondaine (1960) respectively.

Often one cannot stop with transcribing a text, but must go on to describe (in effect catalog) the manuscript containing the text. A competent description of a manuscript must naturally identify its literary contents as well as take account of its script or scripts, but it must also deal with all sorts of features that one may call codicological, to say nothing of its decorative features, if they are present, and its later history. What has been said above and what follows in the sections below can be of assistance in this descriptive work, but it would be advisable to consult some model catalogs, to which references may be found in Kristeller (1965). Many guidelines have been proposed for this work, which has a long history (cf. Wilson 1956; Petrucci 1984); especially useful in terms of current requirements for descriptions of manuscripts of various sorts are Reichlin (1965) and Mazai (1975b, 133–72), and also, because they bring the computer into play, Grujs and Holger (1981) and Jenolo and Morelli (1990).

**WRITING MATERIALS**

Assertions have sometimes been made that certain kinds of writing materials necessitate certain kinds of script. The facts, however, do not bear out this supposed necessity even where it would seem most likely to hold, namely in the case of inscriptions chiseled on stone (cf. Catchch 1968, 90–97, 283–84). Nevertheless there are certain factual correlations between writing materials and scripts that may be more or less helpful in dating and localizing.

Papyrus was the predominant writing material of Antiquity even though it is probable that more extant Latin writing from before the fourth or fifth century after Christ survives on stone than on papyrus because of the latter’s fragility. The vast majority of extant papyri owe their survival to the happy accident of having been buried in the favorable soil of Upper Egypt; it is no surprise, therefore, that no Latin papyri are known from before the first century B.C., when the Romans conquered Egypt (cf. Mari- chal 1950). Of a handful of extant Latin manuscripts on papyrus neither copied nor preserved in Egypt, the latest may date from the early eighth century (cf. CLA, vol. 5, no. 514; Tjäder 1954–82, 1:37–42). Surviving Latin documents on papyrus from Ravenna and the Merovingian chan-
geries are fairly numerous from the sixth and seventh centuries and an example from the papal chancery can be dated as late as the mid-eleventh century (cf. Tjäder 1954–82, 1:35–37, 42–48; Santifaller 1953, 52–76).

The earliest surviving example of parchment—the predominant writing material of the Middle Ages (cf. Reed 1972; Santifaller 1953, 77–115; Wattenbach 1896, 113–39; also Kenyon 1951, 87–120)—contains a sale contract in Greek dating from as early as 195–189 B.C. Animal skins in the form of leather rather than parchment had of course already been in use for writing for several millennia. The Roman world encountered parchment no later than the first century after Christ, but only a few Latin examples survive from before the fourth century. Only with the fifth century do extant Latin literary texts on parchment clearly begin to exceed those on papyrus, but because of the latter’s poor survival prospects one may not be absolutely sure of the predominance of parchment until the seventh and eighth centuries, when the percentage of extant Latin literary texts written on papyrus approaches zero. Parchment has, of course, remained in use ever since, but during the fifteenth century its predominant position for the copying of books was taken over by paper.

Much more helpful for dating and placing purposes than the mere use of parchment, however, are the methods and quality of its preparation. Wattenbach (1896, 113–39) records some of the variations in time and place. As an example one may cite the kind of writing material developed by Irish and English artisans in the seventh and eighth centuries—velvet-like in appearance, somewhat rough to the touch, and showing little difference between the hair and flesh sides of the skins—which enables direct or indirect Insular influence to be inferred when it is encountered in manuscripts of Continental origin. This Insular material is called vellum in CLA (cf. vol. 1:xii; vol. 2:viii [2d ed., p. xii]), but in current general usage vellum simply designates the finer kind of parchment.

Palimpsests are not limited to parchment, but it is appropriate to mention them here because papyrus palimpsests have not survived and even if they did would not offer the same possibility of being read. Etymologically the word palimpsest simply means something that has been rubbed or scraped off for rewriting, but the word has taken on the meaning of something that has actually been written on two or more times and that has usually had the ink of its previous writing washed off rather than scraped or rubbed. Even when palimpsests do not contain texts previously considered lost (e.g., Cicero’s De re publica, which was found under St. Augustine’s Enarrationes in Psalmos), and most do not, they can nevertheless be useful sources for economic, cultural, and intellectual history. The oldest palimpsests have been rather well catalogued (cf. Lowe 1972, 2:480–519, and pls. 114–19, for those of which the lower script antedates the ninth century), but many later ones still remain to be discovered or studied. What has greatly facilitated their exploitation for both paleographical and textual purposes (cf. Dold 1950) has been the invention of fluorescent photography, which depends on the fact that ink with metallic content, even if only a residue remains, does not fluoresce, while parchment (unlike papyrus) does so very well. Previously used chemical reagents often had the long-range effect of rendering both upper and lower scripts less legible than they were before (cf. faces in CLA, vol. 4, nos. 486–87, 500), but never chemical methods have been proposed and used (cf. Ouy 1958). Digital image-processing is perhaps an even more promising recent invention for reading not only palimpsests but also faded or defaced texts of any kind (cf. Benton 1978; Benton and Soha 1979).

The invention of paper in China coincides roughly with the date of the earliest preserved parchment, but the appearance of paper in the Latin world and the beginning of its manufacture there occur much later (in general cf. Santifaller 1953, 116–52; Wattenbach 1896, 139–49). The oldest extant Latin literary text on paper may date from the tenth century (cf. Lowe 1972, 2:545, 557–58, 561, and pls. 120, 126–27). Paper was known in Moslem Spain by the ninth century and a document of the year 1009 and a liturgical text copied before the year 1036 still survive in Spain. In Italy the Norman rulers were using paper for some documentary purposes by the early twelfth century and an extant Genoese cartulary on paper was begun in 1154. Literary evidence of about this same time shows an awareness in France and Germany of at least the existence of paper, although extant samples survive only from the thirteenth century onward. Paper was used in England too in the thirteenth century, but no extant examples seem to antedate the early fourteenth.

The first paper documents and books copied in the West used paper either from the East or from Spain where paper mills certainly existed in the twelfth century and possibly already in the eleventh or even tenth century. The use of paper in the Latin West did not become widespread, however, until after paper mills began to be established in Italy in the first half of the thirteenth century, apparently first at Fabriano in the province of Ancona and then in many other cities. France got paper mills in the first half of the fourteenth century, Germany certainly by the late fourteenth century, and England, strangely enough, not until the last decade of the fifteenth century.

Paper is made of various animal or vegetable materials that can be converted into pulp which, when drained through a screen or sieve, leaves a residue that dries out to form a sheet of paper. Paper of Eastern manu-
facture can be distinguished from the earliest Western products by differences in surface, color, texture, format, and the screen pattern that is reflected on the paper (cf. Irgoin 1950, 194–204). Among Western products themselves some rough dating possibilities are offered by changes in the screen patterns over the centuries (cf. Irgoin 1950, 201, 202; Briquet 1905, 22–29). Much more precise dates, however, can often be determined from the wire designs—monograms, animals, or other figures—that papersmakers attached to their screens as an identifying label or trade mark for their products. Although the screen pattern as a whole could properly be called the watermark or filigrane, this name has been applied more specifically to these identifying designs (cf. Briquet 1907, the classic work on this subject; Mosin and Trajic 1957; Piccard 1961; Irgoin 1980; and Zerdoun Bat-Yehouda 1989). The custom of using watermarks began in the Fabriano region in the last quarter of the thirteenth century (cf. Briquet 1907, no. 5,410, dated in 1282) and spread rapidly from there. In establishing dates for these marks, Briquet examined thousands and thousands of dated and placed documents, tracing the watermarks and recording the places and earliest dates they were used. Because this approach only establishes a terminus post quem nor for the making of the particular sample of paper observed, it does not exclude an earlier or —since a watermark could remain in use for some years—even a later date of manufacture for other samples showing an identical watermark. Stevenson (1961; 1967, 26–127, 248–52) suggests some conditions and techniques that can narrow the possible leeway (for a more cautious approach cf. Bühler 1973, 237–65). The places of copying recorded by Briquet do not, of course, exclude still other places. Another difficulty with Briquet, namely the inaccuracies inherent in his method of tracing watermarks by hand from pages where they are often obscured by writing, can now be overcome through D. F. Erasto's beta-radiographic method of reproduction (cf. Irgoin 1980, 19, and fig. 5; Techniques 1974, 159–76).

INK

Of the many coloring materials, both dry and liquid, used in the making of letters—chalk, graphite, lead, crayons, paint, ink, etc.—only ink will be discussed here (for recipes cf. Zerdoun Bat-Yehouda, 1983; also Wattenbach 1896, 233–61; Diringer 1953, 544–55; and especially for chemical aspects Barrow 1972, 8–28). Cases in which a script's visual contrast from its background was achieved not by the positive application of color but rather by rearranging or removing some of the writing surface, as with incised inscriptions, can be left for treatment below under writing instruments.

Inks were made with a coloring substance, a solvent (rainwater, vinegar, or wine), and a gummy substance (such as gum arabic) that supplied emulsifying, viscous, suspensive, and adhesive properties for the coloring. A carbon base (soot, lampblack, or charcoal) provided the color for the oldest known inks. But by the first century after Christ a metallic gall ink—in which a combination of ferrous or possibly copper sulfate (green or blue vitriol respectively) and gall (a source of tannic acid) serves as a substitute for the carbon —was beginning to be experimented with, and eventually it became the most widely used of all writing fluids, in part because it was less likely to clog the pen than the carbon ink was. The special interest of metallic gall ink for dating and placing scripts is that the color of the ink varies according to the ratio of gall to vitriol. A ratio of three to one makes for a black ink. Lesser proportions of gall result in the ink turning to various shades of brown. Because different colors have in fact prevailed in different eras and regions (cf. Bischoff 1990, 16–18), ink color may be usable as corroborative evidence to establish a given period or place or origin. The evidence can usually be no more than corroborative, however, because the eventual color of metallic gall ink can also be affected not only by the chemical nature of the writing surface but by the circumstances of preservation as well. It is possible, however, that iron-based inks, especially when used on paper, may eventually become a feasible source of much more positive dating evidence. McNeill (1984) has developed a technique that enables him to date inks of this sort with an accuracy of ± 30 years. The technique is based on the secondary ion migration that gradually and uniformly takes place from the ink and that can be measured by means of scanning auger microscopy (SAM).

WRITING INSTRUMENTS

While writing instruments have had a greater impact than writing materials on the form of scripts, somewhat paradoxically they are less useful for purposes of dating and placing and hence can be dealt with rather summarily. By writing instruments here are meant only those directly used to produce the letter forms, not such auxiliary scribal equipment as penknife, eraser, sponge, ruler, awl, inkpot, etc. (on these cf. Wattenbach 1896, 203–19, 228–32; Jones 1946; Diringer 1953, 559–61 and figs. XI, 1–2).

In terms of impact, writing instruments can clearly affect the appear-
ance of letters. For one thing, through their flexibility or the breadth of their nibs they can facilitate or even necessitate shaded writing. For another, through the angle of the nib cut—if one assumes that the other factors in play here, namely the angle of the writing line and the angle of the pen, remain the same—they can determine the orientation of the thick and thin strokes on the writing surface and thereby facilitate the writing of one kind of script and obstruct another (cf. Hurm 1928, 8–12; and on the position of the writing surface Metzger 1968). Beneventan minuscule, for example, is more easily written with a broad nib cut so it is shorter on the left (from the scribe's perspective), while formal Gothic textual is more easily written with a nib cut so it is shorter on the right. One must remember, however, that nib width and angle are factors within the scribe's control and therefore cannot be given completely independent explanatory value. It is much more likely that the desired shape of the stroke determined how the nib was cut rather than vice versa. Furthermore, scribes were not completely at the mercy of the nib angle, as one can see when hair-lines run at right angles to each other or when parallel strokes are sometimes thick and sometimes thin. The limitations on the usefulness of writing instruments for dating purposes arise from ignorance about when many of the instruments first came into use, from the vastness of the periods during which they were used, and sometimes from difficulty in determining just which instrument was being used. Scribal portraits and literary evidence must be interpreted with some caution.

The variety of instruments used for making letters is very large (cf. Wattenbach 1896, 203–32; Diringer 1953, 553–63 with facs.; Hunger 1961, 40–43 with facs.; Bischoff 1990, 18–19). Even the naked hand can serve, as when one uses a finger to write in wet sand or on a dusty window. Historically, the most important in the Middle Ages, however, were the chisel and stylus among instruments that accomplish their task by removing or re-arranging some of the writing surface, and the brush, reed, quill among those that accomplish their task by applying coloring matter to the writing surface. The chisel, responsible for the stone inscriptions of Antiquity and the Middle Ages, is technically a lettering rather than a writing instrument (although the designs guiding the chisel were themselves probably made with a brush or other writing instrument). The chisel does not seem to favor rectilinear letter forms over rounded ones (cf. Catich 1968, 90–96). The stylus, made of iron, silver, bronze, ivory, etc., and particularly suited for writing on wax tablets, was used from Antiquity through the Middle Ages for school exercises, first drafts, letters, business records, etc. In the earlier Middle Ages it was also used in parchment manuscripts particularly for entering interlinear vernacular glosses (cf. Bischoff 1966–81, 1: 88–92). Of the color-applying instruments the most flexible is the brush, which can run and turn in every direction. It was used in Antiquity for wall writing and for the designs followed by the sculptors of inscriptions in stone, and in the Middle Ages also for initials. Because of the raggedness of an unrefined brushstroke ending, Catich (1968) has argued that the brush originally inspired the invention of the serif. Although metal pens were not unknown in Antiquity, the chief writing instrument in use then for literary texts was the reed (calamus or canna), which, if its nib is frayed or shredded, can almost take on the characteristics of the brush. It has been claimed, though this seems to be more of a possibility than a necessity, that its main characteristic is the absence of any strong contrast between thick and thin strokes. When, if ever, the reed went completely out of use is unknown—in any event it enjoyed a minor revival among some humanists in the fifteenth century—but there is no question that it was superseded sometime during the Middle Ages by the quill, made usually from a goose feather but also from feathers of swans, peacocks, crows, and turkeys. There is testimony to the use of the quill at latest by the sixth century, and Isidore of Seville in the early seventh century mentions it alongside the reed (Etymologiae 6:14). This early use would seem to dispose of the argument by Dobieche Rojdestvensky (1923) that the introduction of the quill brought about the development of Gothic script. Illustrated instructions for making reed and quill pens are given by Johnston (1939, 17–26).

THE EXTERNAL FORM OF MANUSCRIPTS

Neither the roll nor the codex—historically the two chief ways of attaching multiple pieces of writing material together for better preserving the integrity of texts—had any necessary influence on the form or ductus of scripts, and the particular ways in which the elements or parts of the roll and codex were disposed for writing did not have such influence either. Nevertheless, because external dimensions, column sizes, number of lines per column, and methods of quire formation, ruling, and prickling can be extremely various, with the differences or constellations of differences easily recognizable and often subject to exact measurement or enumeration, these external features—each a matter of direct interest to codicology—can sometimes furnish the most helpful of all evidence for attributing manuscripts to individual workshops or scriptoria. It must be remembered, of course, that material techniques can be transferred to new areas or revived
from the past quite independently of the scripts with which they were first developed.

Because the roll — much older than the codex — was rapidly going out of fashion for Latin literary texts by the fourth century after Christ, it can be treated very summarily here. For details about its process of manufacture, its sizes — which rarely exceeded 10 to 11 meters — the dimensions of its writing columns, the number of lines per column, its labels and containers, cf. especially Schubart (1962, 37–99) and Kenyon (1951, 40–86); also Lühringer (1953, chap. 4), Hunger (1961, 43–47), and Wattenbach (1896, 150–74). Although rolls can be made of parchment (cf. Santifaller 1965) or paper, ancient ones were normally made of papyrus. The writing was done in columns of which the axis was at right angles to the direction in which the rolling was done. Only exceptionally was the roll written on both sides (opisthograph). The roll had most of the inconveniences of the modern microfilm besides a few others of its own. In the parchment or paper rolls used in the Middle Ages for documentary, genealogical, or liturgical purposes (cf. Bischoff 1990, 32–33), often only one piece of material was involved and the column of writing ran in the same direction as the rolling process.

The form par excellence of the medieval book was not the roll, of course, but the codex, which has been defined in a fundamental study (Roberts and Skeat 1987, 1; cf. also Turner 1977) as “a collection of sheets of any material, folded double and fastened together at the back or spine, and usually protected by covers.” The advantage of the codex over the roll with respect to convenience of use is so great that the invention of the codex may almost rival the invention of printing in terms of social and intellectual significance. There were other advantages that the codex enjoyed over the roll, such as greater compactness, durability (if the codex was made of parchment and the roll of papyrus), and economy (if both were made of the same material because the codex used both sides of the sheet). These advantages clearly had something to do with the invention of the papyrus or parchment codex in the first century after Christ by the Romans, who were simply extending a principle already in being when multiple wooden tablets covered with a recessed layer of wax for writing on were fastened together (cf. CLA, Suppl., no. 1,684, for a facsimile of a waxed tablet). The most important factor in popularizing the codex seems to have been its adoption by the Christians, probably from the very beginning, for their Scriptures. The codex did not become the predominant form for the pagan book before the fourth century.

While the terminus ante quem non provided by the mere use of the codex form is too early to be helpful to the medievalist, the methods used in preparing and disposing the parts of the codex are potentially very helpful in determining both dates and places of origin. The quires or gatherings, that is, the groups of folded sheets or bifolia that were sewn together to form the codex, have varied in size from one to more than fifty bifolia, though the norm in most times and places has been four or five. Bifolia within a parchment quire were usually arranged to avoid having flesh side face hair side; the latter is normally darker than flesh side and often shows traces of follicles. Flesh side would naturally face flesh side and hair side face hair side if the quire was formed by three successive folds of a single piece of parchment or by two successive folds of two pieces of parchment then properly united. There is evidence that quires constituted by folding in this way, paper as well as parchment ones, may sometimes have been copied before the leaves were folded and cut, that is, in an unnatural sequence akin to the method of “imposition” used in printing. (Cf. Gilissen 1977, pt. 1; Bozzolo and Ornato 1983, 123–212, 379–84.)

The bifolia composing the quire were ruled in some way to guide the scribe’s lines of script. Practice varied with respect to (1) the number of bifolia ruled at one time, (2) whether they were ruled before or, as was the earlier Insular practice, after folding, (3) whether the hair or flesh side received the direct impression of the ruling instrument, and (4) the kind of instrument used to make the impressions (the dry point or stylus from the earliest period onward, lead starting only from the eleventh century, and pen and ink starting only from the thirteenth century). When several bifolia were ruled at one time with a stylus before they were folded, they were often then rearranged to make groove face groove and ridge face ridge. This would happen naturally if an entire sheet was ruled before it was folded into bifolia. The practice of copying the first line on a page below the top ruled line instead of above it has been shown by Ker (1985, 70–74) to provide, at least in England, a terminus ante quem non in the late twelfth century for glossed books of the Bible and in the thirteenth century for other texts. Some scribes, however, will continue to write above the top ruled line.

The ruler that guided the path of the ruling instrument was itself usually guided by two parallel rows of minute holes pricked at regular intervals down the portion of the page intended for writing (cf. Jones 1946). These prickings were of varying shapes and the rows of them were inserted either within the area intended for writing (the practice in the oldest manuscripts) or on the edge of it or within the marginal area (where, if they were close to the outer edge, they often have been cut off by binders). When
the ruling was done after the bifolia were folded, long the Insular practice, a row of holes can usually be seen towards both the inner and outer edges of each folio rather than only towards the outer edge.

Dimensions offer innumerable opportunities for codices to differ from another, with the differences expressible in quantitative terms. Absolute dimensions as well as ratios of height to width varied with respect to both the page and the written area. Scriptoria often had favored proportions between script area and marginal area, though the original dimensions of the page have often been obscured by later trimming of the margins. On format or mise en page cf. Martin and Vezin (1990), Gilissen (1977, pt. 2), and Bühler (1973, 100-108). The number of columns and of lines per column also varies. The combination of choices that a given scriptorium made among all these variables in quire formation, ruling, prickling, and format, may turn out to be uniquely identifying of its products (cf. Gilissen 1969).

Differing methods of distinguishing and identifying the parts of a codex in order to facilitate consultation can provide further ground for dating and localizing. Filiation, pagination, and column numbering were rather slow to become popular, since they had only limited reference value until printing produced a multitude of identical copies (cf. Lehmann 1959-62, 3:1-59). But quire marks or signatures, intended for the aid of the binder, were widely used throughout the Middle Ages (though many have been cut off in successive rebindings). They could vary according to (1) type of symbol used (letters or Roman or Arabic numerals), (2) location (usually on the last, occasionally on the first, page of the quire; in the middle or right half of the lower margin), (3) kind of script used, (4) the abbreviation for quire (quaternio), and (5) the decoration sometimes enclosing the mark. The practice of writing in the lower right margin of the last page of the quire the first word or words of the next quire (called catchwords or reclamantes or custodes), of which stray examples survive from the ninth and tenth centuries, began to be more widely observed in the eleventh century, with the earliest impulse apparently coming from Spain (cf. Vezin 1967). (On codicological questions see also Canart 1979; Codicologia 1975-; Delaissé 1959; Gruits 1972; Lemaitre 1989; Masai 1950a; Parkes 1976; Vezin 1978.)

BINDINGS

The pasting together of pieces of papyrus to form a roll and the provision of a container to hold and protect the roll might be regarded as a form of binding, but this term is more properly used to describe the process in which the separate quires of a codex are sewn together and provided with a permanently attached protective cover. By extension, the term is often applied primarily to the cover alone. Writing, by itself, does not imply binding, but most writing that has survived, apart from that found in documents, coins, and monuments, is in bound form and has survived because it was bound. What can be said, therefore, about the date and place of origin of bindings may throw light on the scripts that they protect and preserve.

Deluxe bindings have always attracted attention as a valuable, even if minor, form of art. But in recent decades scholarly attention has begun to be equally devoted to the systematic and historical study of less elaborate forms of binding decoration (cf. Kyrijs 1951-58), as well as of the humble techniques used in making even totally unadorned bindings (cf. van Regemorter 1948, 1955; Pollard 1976; also Bischoff 1966-81, 1:93-100; and McGurk 1956). The history of bookbinding is thus claiming a more and more important place among the branches of codicology.

Unless the binding is original, however (and the older the manuscript the less likely this will be), it naturally furnishes better clues to a manuscript's later history than to its origin. But even when the binding is not the original one, it still constitutes a terminus post quem non for the script, except when it has been salvaged from an earlier book and reused or when the writing was entered after the book was already rebound.

Because rebinding and the consequent retrimming of the edges of the pages have frequently resulted in the removal of prickling holes, quire marks, catchwords, and other marginal notations, one cannot, of course, argue from the mere absence of these features now to their absence at the start. (Cf. also Helwig 1953-55; Diehl 1946; Wattenbach 1896, 386-408; Needham 1979; Gilissen 1983; Bischoff 1990, 30-32.)

MODERN REPOSITORIES OF MEDIEVAL WRITING; MEDIEVAL LIBRARIES

Where is script evidence to be found and how can one get at it? In general one may say that the great bulk of the evidence is preserved in public and ecclesiastical archives, libraries, and museums. Because the emphasis in this chapter has been more on books than on charters or inscriptions, only libraries will be discussed here. For help in keeping up with manuscripts in transit between libraries, see the section on "Manuscripts at Auction" in English Manuscript Studies (1989-).
The presence of medieval script material can be verified in some libraries only by direct communication with the library itself and sometimes only by an on-the-spot inspection. Usually, however, there are published catalogs of a library’s manuscript holdings and an excellent bibliographical guide to these catalogs has been provided by Kristeller (1965). Microfilm copies of the many unpublished catalogs to which Kristeller also refers are now available on 348 reels from the Renaissance Society of America (cf. Cranz 1987). Kristeller’s book also has a section devoted to general library guides, such as the *Jahrbuch der deutschen Bibliotheken* (1989) and the *Répertoire des bibliothèques et organismes de documentation* in France (1971). These guides, which are continually in need of revision, provide extremely useful information about library holiday schedules, daily hours, conditions for use, photographic facilities, etc. They are an indispensable help in preparing an *iter palaeographicum*.

The need for many palaeographical *itinera* has, of course, been lessened, if by no means eliminated, by the possibilities of photography. One can order microfilms directly from most larger libraries. In libraries with no photographic facilities the Institut de Recherche et d’Histoire des Textes in Paris may be able to arrange to make microfilms on commission for use on loan. The manuscript holdings of more and more libraries are being microfilmed in their entirety for use elsewhere. Thus microfilms of the Vatican Library manuscripts are available for use at St. Louis University and those of the Ambrosian Library in Milan are available for both use at and loan from the University of Notre Dame. The Hill Monastic Manuscript Library (HMML) at St. John’s University in Collegeville, Minnesota, has microfilms of over 73,000 volumes and over 120,000 papyri including most of the manuscripts in Austria and those of various libraries in England, Ethiopia, Germany, Italy, Malta, Poland, Portugal, and Spain, and is ever acquiring more (cf. Plante 1967–74; *Annals of HMML*). HMML can usually arrange to have positive copies made by University Microfilms in Ann Arbor, Michigan, for purchase. Copies of thousands of manuscripts on microfilm from England and Wales, filing 2,652 reels, can be purchased from the Library of Congress (cf. Born 1955). Many other libraries, such as those of the Pontifical Institute of Mediaeval Studies in Toronto, the University of Pennsylvania, the Grabmann-Institut in Munich, have substantial microfilm collections. (Cf. also Sharpe 1971.)

Although access to modern libraries is a more immediate concern of the palaeographer, he cannot ignore the medieval libraries and the manifold ways in which their holdings were transferred or dispersed and finally resettled in the modern ones. A scholar, for example, attempting to determine the exact place of origin of a manuscript, lacks a localizing sub-

scription by the scribe would greatly welcome a mark of early library ownership. Someone attempting to date a manuscript of which the place of origin is known would want to compare it, if possible, with exactly or approximately dated manuscripts from the same scriptorium. More often than not these latter, if they ever existed, would be manuscripts that were preserved in the same medieval library. Library history (cf. Christ 1984; Thompson 1939 for introductions) can often enable one to master the vicissitudes leading both back to a manuscript’s earliest home and forward to the present homes of other books from the same library. A model study in this genre was made by Delisle (1868–81). The most solid foundations for library history of this kind are the library catalogs that were produced in the Middle Ages themselves. Gottlieb (1890) and Beddie (1930, 17–20) provide guides, somewhat antiquated, to the extant catalogs (cf. also Derolez 1979). Editions of many of the texts can be found in Becker (1885), *MBKÖ* (1915–71), *MBKDS* (1918–), Derolez (1966–), and also Delisle (1868–81). Sometimes these catalogs are detailed enough, particularly when they supply the first words of the second folio (*dictio probatoria*—cf. Willman and Dziedzic 1978), to leave no doubt that the manuscript they are describing is identical with one in hand. When they are less detailed, however, the medieval home of an extant volume may be able to be established by other means. For an extraordinary “reconstruction” of the medieval libraries of Great Britain on the basis of ex libris, bindings, shelfmarks, etc., as well as catalog references, cf. Ker (1964 and Watson’s *Supplement*). A similar work is now available for Germany (Krämer and Bernhard 1989–90).

**BIBLIOGRAPHY**

The following bibliography naturally concentrates more on the medieval than on the ancient or modern Latin scripts, and it emphasizes, although it does not limit itself to, easily accessible works. Because it also emphasizes works with facsimiles and particularly those with transcriptions (indicated here by an asterisk after the plate or facsimile reference), works with obsolescent texts could not always be excluded. References to complete facsimile editions of manuscripts include only a few recent series not listed in Omont (1935) and extending beyond Zotter (1976). References to journals and other serial publications have been limited to the most directly relevant; many other pertinent journals may be found in listines for articles. Current publications can be kept up with through the "Bulletin codicologique" in *Scriptorium* and through the *Gazette du livre médiéval*, a clearinghouse for the exchange of ideas and a bulletin board for announcing new publications, confer-


ences, seminars, exhibitions, research projects, and library and university personnel changes. One may also consult *Codices manuscripti: Zeitschrift für Handschriftenkunde* and *Scrivura e civiltà*. The advantages of classification that had to be sacrificed for the convenience of having one alphabetical list are partially restored through the references to this list made in the various sections of the text above. All of the various series of dated manuscripts are listed here under the conventional siglum "CMD" followed by an abbreviation (usually the postal one) for the respective countries. Many of the works listed below contain further bibliography, but see Boyle in particular as well as Braswell, Mateu Ibars, and Tjäder (1977–).

Occasional annotations are provided, especially for the handbooks. The latest of these handbooks, that of Bischoff (1990), by providing a critical evaluation and synthesis of the abundant paleographical scholarship of the last fifteen years, is itself an excellent bibliography.


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