

Renaissance Graphic Design

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The word renaissance means “revival” or “rebirth.” Originally this term was used to denote the period that began in the fourteenth and fifteenth centuries in Italy, when the classical literature of ancient Greece and Rome was revived and read anew. However, the word is now generally used to encompass the period marking the transition from the medieval to the modern world. In the history of graphic design, the renaissance of classical literature and the work of the Italian humanists are closely bound to an innovative approach to book design. Type design, page layout, ornaments, illustration, and even the total design of the book were all rethought by Italian printers and scholars. The prototype roman alphabet designs of Sweynheym and Pannartz (see Fig. 6–22) and the coarse decorative borders of early French books (see Fig. 6–24) were the first tentative steps toward unique Renaissance book designs. The flowering of a new approach to book design that was independent of the German illustrated book started in Venice and continued there during the last three decades of the fifteenth century.

Graphic design of the Italian Renaissance

It was not Florence, where the wealthy Medicis scorned printing as inferior to manuscript books, but Venice—the center of commerce and Europe’s gateway to trade with the eastern Mediterranean nations, India, and the Orient—that led the way in Italian typographic book design. A Mainz goldsmith, Johannes de Spira. (d. 1470), was given a five-year monopoly on printing in Venice, publishing his first book, *Epistolae ad familiares* (Letter to Families), by Cicero, in 1469. His innovative and handsome roman type (Fig. 7–1) cast off some of the Gothic qualities found in the fonts of Sweynheym and Pannartz; he claimed that it was an original invention. Printed in partnership with his brother, Vindelino, de Spira’s 1470 edition of Augustine’s *De civitate Dei* was the first typographic book with printed page numbers. Vindelino de Spira inherited his brother’s press—but not the exclusive right to printing in Venice—upon Johannes’s untimely death.

Nicolas Jenson (c. 1420–80), who had been Master of the Royal Mint of Tours, France, was a highly skilled cutter of dies used for striking coin. He established Venice’s second press shortly after de Spira’s death. In 1458 King Charles VII of France sent Jenson to Mainz to learn printing. It has been said that

Jenson chose not to return to France after Louis XI ascended to the French throne in 1461. Jenson's fame as one of history's greatest typeface designers and punch cutters rests on the types first used in Eusebius's *De praeparatione evangelica* (Evangelical Preparation), which presents the full flowering of roman type design (Fig. 7-2).

Part of the lasting influence of Jenson's fonts is their extreme legibility, but it was his ability to design the spaces between the letters and within each form to create an even tone throughout the page that placed the mark of genius on his work. During the last decade of his life Jenson designed outstanding Greek and Gothic fonts and published approximately 150 books that brought him financial success and artistic renown. The characters in Jenson's fonts aligned more perfectly than those of any other printer of his time. Jenson and many other early printers designed trademarks to identify their books (Figs. 7-3 through 7-5). As Lance Hidy has noted, these emblems bear witness to the revived attention to Egyptian hieroglyphics during the Renaissance. At the time, hieroglyphics were erroneously believed to be entirely ideographic and not phonetic. This resulted in the design of symbols and heraldry that are forerunners to those used in modern graphic design.

7-1. Johannes de Spira, typography from *De civitate Dei*, 1469. The vertical stress and sharp angles of textura that remained in Sweynheym and Pannartz's fonts yielded to an organic unity of horizontal, vertical, diagonal, and circular forms.

7-2. Nicolas Jenson, typography from Eusebius's *De praeparatione evangelica*, 1470. A new standard of excellence was established with wider letterforms, lighter tone, and a more even texture of black strokes on the white ground.

7-3. Attributed to Nicolas Jenson, mark for the Society of Venetian Printers, 1481. One of man's oldest symbols, the orb-and-cross motif is found in a chamber of Cheops's pyramid at Giza, where it was hewn into stone as a quarry mark. In Jenson's time it symbolized that "God shall reign over earth."

7-4. Laurentius de Rubeis, printer's mark, 1482. This orb and cross was designed in the town of Ferrara, located about 90 kilometers (55 miles) southwest of Venice.

7-5. Pere Miguel, printer's mark, 1494. Dozens of incunabula printers adopted an orb-and-cross mark. Miguel worked in Barcelona, Spain.

Renaissance designers loved floral decoration. Wildflowers and vines were applied to furniture, architecture, and the manuscript. The book continued to be a collaboration between the typographic printer—in the incunabula period typography was sometimes called artificial writing—and the illuminator, who added initials and ornaments. The logical next step was to print everything on a printing press. Erhard Ratdolt (1442–1528) took significant steps toward the totally printed book. A master printer from Augsburg, Germany, Ratdolt worked in Venice from 1476 until 1486. Working closely with his partners, Bernhard Maler and Peter Loeslein, Ratdolt's 1476 *Calendarium* (Record Book) by Regiomontanus had the first complete title page used to identify a book (Fig. 7-6). In addition to this innovative title page, *Calendarium* contained sixty diagrams of solar and lunar eclipses printed in yellow and black. (Fig. 7-7). Fear and superstition were being swept away as scientists began to understand natural phenomena, and printers disseminated this knowledge. Eclipses moved from black magic to predictable fact. In the rear of the book is a three-part mathematical wheel for calculating the solar cycles (Fig. 7-8).

7-6. Erhard Ratdolt, Peter Loeslein, and Bernhard Maier, title page for *Calendarium*, by Regiomontanus, 1476. The title and author are identified in verse describing the book. The date and printers' names in Latin appear below.

7-7. Erhard Ratdolt, Peter Loeslein, and Bernhard Maier, page for *Calendarium*, by Regiomontanus, 1476. A grid of metal rules brings order and legibility to this record of past and future eclipses.

7-8. Erhard Ratdolt, Peter Loeslein, and Bernhard Maier, pages from *Calendarium*, by Regiomontanus, 1476. The two top circles are printed on heavy paper, cut out, and mounted over the larger woodcut with tape and a string. This may be the first "die-cut" and manual tip-in graphic material in a printed book.

7-9. Erhard Ratdolt, Peter Loeslein, and Bernhard Maier, title page for *Euclid's Geometriae elementa*, 1482. A dazzling white-on-black design brackets the text, and incredibly fine line diagrams in the wide margin visually define Euclid's terms.

7-10. Erhard Ratdolt, Peter Loeslein, and Bernhard Maier, page from *Euclid's Geometriae elementa*, 1482. The wide outer margin is maintained throughout the book for explanatory diagrams. Two sizes of initial letters denote sections and subsections.

Yet another innovation by Ratdolt was the way woodcut borders and initials were used as design elements. These decorative features included naturalistic forms inspired by Western antiquity and patterned forms derived from the Eastern Islamic cultures. Bernhard Maier (also called Pictor) is assumed to be the designer of Ratdolt's borders. Both fine-line ornaments and reversed designs (white forms on a solid background) were used; sometimes these were printed in red ink. A three-sided woodcut border used on the title page for a number of Ratdolt's editions became a kind of trademark. It appears on the title page of *Euclid's Geometriae elementa* (Elements of Geometry) of 1482 (Fig. 7-9). The format design uses a large outer margin about half as wide as the text column width (Fig. 7-10). Small geometric figures, whose sheer delicacy of line represents a technical breakthrough, are placed in the margins adjacent to the supporting text.

7-11. Giovanni and Alberto Alvisi, title page from *Ars Moriendi*, 1478. The vocabulary of graphic design possibilities was expanded by the design and casting of metal decorative ornaments that could be composed as part of the page along with type.

7-12. Manuscript book of Roberto Valturio's *De Re Militari*, undated. Freely drawn in brown pen-and-ink, the illustrations have brown and ochre washes applied.

7-13. Johannes Nicolai de Verona (printer), pages from Roberto Valturio's *De Re Militari*, 1472. Detail and gestural line quality are lost in the translation from manuscript original to printed volume, but the basic layout remains the same.

When Ratdolt left Venice and moved back to his native Augsburg, he publicized his return by issuing the first printer's type specimen sheet. This showed his range of typographic sizes and styles. Ratdolt remained an active printer until his death at age eighty-one. The innovations of Ratdolt and his partners during his decade in Venice were not immediately adopted by other Venetian printers. The full flowering of graphic decoration in the printed book did not begin until the turn of the century.

The *Ars Moriendi* (Art of Dying) was a best seller during the fifteenth century. At least sixty-five editions, including manuscripts, block books, and typographic books, were produced before 1501. An edition published on 28 April 1478 by the Italian printers Giovanni and Alberto Alvisi in Verona is believed to be the first design that used *printers' flowers* (*fleurons*), which are decorative elements cast like type. The Verona *Ars Moriendi* used these as graphic elements in the title page design and as fillers in short lines that left blank areas in the text blocks (Fig. 7-11).

It is quite possible that a printer identified as Johannes Nicolai de Verona, who printed a manual on warfare entitled *De Re Militari* (About Warfare), by Roberto Valturio, in 1472, was Giovanni Alvisi. The light contour style of woodblock illustration used in *De Re Militari* initiated the fine-line style that became popular in Italian graphic design during the later decades of the fifteenth century.

A fascinating manuscript copy of *De Re Militari* (Figs. 7–12 and 7–13) shows the relationship between the typographic book and the manuscript books used as exemplars or layouts. This manuscript book is written in semi-Gothic script but has marginal corrections in a roman hand. Because these corrections were incorporated by the printer, it is believed that this manuscript version was corrected by the author. Then, it was used as corrected copy by the compositors, as a layout by the blockcutters, and as a guide for page design and makeup by the pressman.

This extraordinary book is a compendium of the latest techniques and devices (many imaginary) for scaling walls, catapulting missiles, ramming fortifications, and torturing enemies. The text is set in a tight column with wide outer margins, and the freely shaped images spread across the pages in dynamic asymmetrical layouts. In the spread showing battering rams, the repetition of the towers and rams' heads gives the pages a lively visual rhythm.

Medieval Christianity fostered a belief that the value of a human life was primarily its effect on God's judgment after death. A turning away from medieval beliefs toward a new concern for human potential and value characterized Renaissance humanism, a philosophy of human dignity and worth that defined man as capable of using reason and scientific inquiry to achieve both an understanding of the world and self-meaning. This new spirit was accompanied by a renewed study of classical writings from Greek and Roman cultures. An important humanist and scholar of the Italian Renaissance, Aldus Manutius (1450–1515), established a printing press in Venice at age forty-five to realize his vision of publishing the major works of the great thinkers of the Greek and Roman worlds. Important scholars and skilled technical personnel were recruited to staff his Aldine Press, which rapidly became known for its editorial authority and scholarship. From 1494 until 1498, a five-volume edition of Aristotle was published.

A most important member of the Aldine staff was Francesco da Bologna, surnamed Griffio (1450–1518). Manutius called this brilliant typeface designer and punch cutter to Venice, where he cut roman, Greek, Hebrew, and the first italic types for Aldine editions. His initial project in Venice was a roman face for *De Aetna* (Fig. 7–14), by Pietro Bembo, in 1495. Griffio researched pre-Caroline scripts to produce a roman type that was more authentic than Jenson's designs. This style survives today as the book text face Bembo.

While in Germany the fifteenth century closed with Koberger and Dürer creating a technical and artistic masterpiece in *The Apocalypse*, in Italy Aldus Manutius ended the epoch with his 1499 edition of Fra Francesco Colonna's *Hypnerotomachia Poliphili* (*The Strife of Love in a Dream* or *The Dream of Poliphilus*) (Figs. 7–15 through 7–17). This romantic and rather tedious fantasy tells of young Poliphilus's wandering quest for his lover, who has taken a vow to preserve her chastity; the journey takes him through classical landscapes and architectural environments. This celebration of paganism—with erotic overtones and a few explicit illustrations—probably escaped scandal only because of its high cost and limited Venetian audience.

7–14. Aldus Manutius, from Pietro Bembo's *De Aetna*, 1495–96. As the model for Garamond in the sixteenth century, this typeface became the prototype for two centuries of European typographic design.

7–15. Aldus Manutius, typographic page from *Hypnerotomachia Poliphili*, 1499. The texture of the headings (set in all capitals), the text typography, and the outline initial have a subtle yet beautiful contrast. The one-line intervals of space separating

the information into three areas introduces light and order into the page.

7–16. Aldus Manutius, illustrated spread from *Hypnerotomachia Poliphili*, 1499. The woodcut images represent the best illustrations of their period and are exquisitely blended with the typography, helping to produce a book of serenity and grace. Unfortunately, the designer of the woodcuts has never been identified.

7–17. Aldus Manutius, illustrated spread from *Hypnerotomachia Poliphili*, 1499. The illustrations, in the classic Venetian style, in both tone and weight are harmonious with the texture of the type.

7–18. Aldus Manutius, page from *Juvenal and Persius, Opera*, 1501. This was one of the first books using Griffo's new italic type. Note the unfilled space for a rubricated initial, the letterspaced, all-capital heading, and the capital roman letter at the beginning of each line.

This masterpiece of graphic design achieved an elegant harmony of typography and illustration that has seldom been equaled. The communicative coordination of the illustrations with the text and the exceptional integration of images and typography indicate that the printer, type designer, author, and artist worked in close collaboration. The name of the artist who designed the 168 delicate linear illustrations is unknown. Griffo designed new capitals for use with the Bembo lowercase. These capitals were based on the most precise research and study of Roman inscriptions available and used the one-to-ten (stroke weight to height) proportion advanced by leading mathematicians of the era, whose search for mathematical laws of proportion included a study of Roman inscription lettering. Griffo made his lowercase ascenders taller than the capitals to correct an optical color problem—the tendency of capitals to appear too large and heavy in a page of text—that had plagued earlier Roman fonts. Griffo's typefaces became the model for the French type designers who perfected these letterforms during the following century. Exquisite chapter headings in capitals of the same size as those used in the text, large outline initials surrounded by stylized floral ornamentation, and an overall lightness to the page, combined with generous margins, fine paper, and meticulous presswork, excited printers and designers throughout Europe. *Poliphili* was Manutius's only illustrated book. After it was published, the Aldine staff turned their attention to scholarly editions.

In 1501 Manutius addressed the need for smaller, more economical books by publishing the prototype of the pocket book. This edition of Vergil's *Opera* (Works) had a 7.7 by 15.4-centimeter (3.75 by 6-inch) page size and was set in the first italic type font. Between the smaller size type and the narrower width of italic characters, a 50 percent gain in the number of characters in a line of a given measure was achieved over Jenson's fonts and Griffo's type for *De Aetna*. Italic (Fig. 7–18) was closely modeled on the cancellaresca script, a slanted handwriting style that found favor among scholars, who liked its writing speed and informality.

7–19. Aldus Manutius, printer's trademark, c. 1500. The swiftest of sea creatures combines with an anchor to signify the epigram, "Make haste slowly."

7–20. Lodovico Arrighi, page from *La operina da imparare di scrivere littera cancellaresca*, 1522. The ample spaces between lines in Arrighi's writing leave room for the plume-shaped ascenders waving to the right in elegant counterpoint to the descenders sweeping gracefully to the left.

7–21. Henri Estienne, title page for Aristotle's *Metaphysics*, 1515. By setting the type in geometric shapes, Estienne achieved a distinctive graphic design with minimal means.

On 14 November 1502, Manutius was granted a monopoly on Greek publishing and italic printing by the Venetian government, and shortly thereafter Griffo and Manutius quarreled and separated. Manutius

wished to protect his huge investment in type design and production; Griffo found that he could not sell his original and popular typeface designs to other printers. With the parting of ways of this printer-publisher and his brilliant staff designer, graphic-design innovation in Venice ended.

Until his death in 1515, Manutius published numerous classical editions in the small format and italics of Vergil's *Opera*. These made the Aldine Press logo—a dolphin and anchor inspired by one of the illustrations in *The Dream of Poliphilus*—famous throughout Europe (Fig. 7–19). Griffo returned to Bologna, where he vanished from the historical record after being charged for the murder of his son-in-law, who was bludgeoned with an iron bar in 1516.

The typographic book came to Italy from Germany as a manuscript-style book printed with types. A series of design innovations, including the title page, roman and italic type, printed page numbers, woodblock and cast metal ornaments, and innovative approaches to the layout of illustrations with type, enabled the Italian printers of the Renaissance to pass on to posterity the basic format of the typographic book as we know it today.

Italian writing masters

Ironically, the inevitable decline in manuscript writing that followed on the heels of typographic printing occurred while new opportunities opened for master calligraphers, almost as a side effect of printing. The rapid growth of literacy created a huge demand for writing masters to teach this fundamental skill, and the attendant expansion of government and commerce created a demand for expert calligraphers to draft important state and business documents. The first of many sixteenth-century writing manuals was created by Italian master calligrapher, printer, and type designer Lodovico Arrighi (d. c. 1527). His small volume of 1522, entitled *La operina da imparare di scrivere littera cancellaresca* (The First Writing Manual of the Chancery Hand) (Fig. 7–20), was a brief course using excellent examples to teach the cancellaresca script. Arrighi's masterful writing was meticulously cut onto woodblocks by engraver Ugo da Carpi. Arrighi's directions were so clear and simple that the reader could learn this hand in a few days. *La operina . . . cancellaresca* sounded the death knell for the scriptorium as an exclusive domain for the few who could write; it rang in the era of the writing master and public writing skill. A follow-up 1523 volume, entitled *Il modo de temperare le penne*, presented a dozen handwriting styles. Among those influenced by Arrighi, Giovanni Battista Palatino (c. 1515–c. 1575) produced the most complete and widely used writing manuals of the sixteenth century.

The Italian Renaissance began to fade with the sack of Rome in 1527 by the combined forces of the Holy Roman Emperor Charles V and his Spanish allies. One of the victims of this outrage appears to have been Arrighi. He was working in Rome at the time, after which his name vanishes from the historical record.

Innovation passes to France

With dreams of conquest and empire, the French king Charles VIII (1470–98) crossed into Italy with a vast army in 1494 and attempted to gain control of the Kingdom of Naples, beginning a fifty-year effort by French kings to conquer Italy. Although vast outlays of money and men gained little except fleeting glory, the cultural vitality of the Italian Renaissance was imported to France. Francis I (1494–1547) ascended to the French throne on 1 January 1515, and under his patronage the French Renaissance flowered as he gave generous support to humanists, authors, and visual artists.

This cultural epoch was a fertile one for book design and printing, and the sixteenth century has become known as “the golden age of French typography.” The initial design impetus was imported from Venice. Henri Estienne (d. 1520) was one of the early French scholar-printers (Fig. 7–21) who became enthusiastic

about Aldus's *Poliphilus*. Soon books printed in roman types, with title pages and initials inspired by the Venetians, were sprouting all over Paris. Estienne's untimely death left his wife with three young sons. The widowed mother quickly married Estienne's foreman, Simon de Colines (d. 1546), who ran the family business until his stepson, Robert Estienne (1503–59), was able to take over in 1526. At this time Simon de Colines opened his own firm. Robert Estienne became a brilliant printer of scholarly works in Greek, Latin, and Hebrew (Fig. 7–22). His growing reputation as a publisher of great books, including a major Latin dictionary, enabled young Estienne to join his stepfather as one of the leading figures in this grand period of book design and printing.

Censorship became an increasingly difficult problem during the 1500s, as church and state sought to maintain their authority and control. Propagating ideas, not printing, was the main purpose of the scholar-printers, who often found their quest for knowledge and critical study in conflict with religious leaders and royalty. In spite of war and censorship, however, the humanist spirit took hold in France and produced both excellent scholarship and a notable school of book design. The leading printers produced books of fine

proportions, outstanding legibility, beautiful typography, and elegant ornamentation. Two brilliant graphic artists, Geoffroy Tory (1480–1533) and the typeface designer and punch cutter Claude Garamond (c. 1480–1561), created visual forms that were embraced for two hundred years.

The term *renaissance man* is often used to identify a unique individual of genius whose wide-ranging activities in various philosophic, literary, artistic, or scientific disciplines result in important contributions to more than one field. Such a person was Geoffroy Tory. His range of accomplishments is astonishing: professor, scholar, and translator; poet and author; publisher, printer, and bookseller; calligrapher, designer, illustrator, and engraver. He translated, edited, and often published Latin and Greek texts. As a reformer of the French language he introduced the apostrophe, the accent, and the cedilla. In the graphic arts he played a major role in importing the Italianate influence and then developing a uniquely French Renaissance school of book design and illustration.

Born of humble means in Bourges, Tory's brilliance captured the attention of the city's leading citizens, who made it possible for him to journey to Italy for study at the universities in Rome and Bologna. Returning to France in 1505, Tory became a lecturer in philosophy at the University of Paris, sometimes worked as a reader at Henri Estienne's printing office, and was active as a scribe and illuminator. His boundless enthusiasm for the visual forms of the Italian Renaissance included a deep love for roman letterforms. Tory's lettering, developed in Italy and used in the 1506 manuscript book *Les heures de Jean Lallemand* (The Hours of Jean Lallemand) (Fig. 7–23), is a light roman with long ascenders and descenders. Some scholars believe that Tory designed early roman types used by Henri Estienne and Simon de Colines.

After a period of publishing with Simon de Colines, Tory made a second extended trip to Italy from 1516 until 1518 to improve his abilities as an artist and designer. Upon returning to Paris, Tory seems to have turned first to manuscript illumination for his livelihood, which quickly yielded to the design and engraving of woodblocks commissioned by printers. After Simon de Colines's 1520 marriage to Henri Estienne's widow, he began to commission borders, floriated letters, trademarks, and an italic typeface from Tory. This collaboration between the master printer and graphic artist established the new open, lighter style.

In sixteenth-century France, engravers were usually booksellers. In keeping with this tradition, Tory opened a Parisian bookselling firm on the Petit Pont under the sign of the Pot Cassé ("broken urn"), where he illustrated, published, bound, and—for several years—printed books. Tory sought out excellent craftsmen and trained them in his approach to book design, which helped to eliminate the dense, claustrophobic page layout and heavy Gothic typography in French printing.

7–22. Robert Estienne, title page for a Bible, 1540. As with many printers' marks of the era, Estienne's olive tree with a branch falling off became a pictorial illustration.

7–23. Geoffroy Tory, pages from the manuscript book *Les heures de Jean Lallemand*, 1506. The armorial frontispiece and forty vignettes have orderly rows of the Latin alphabet's twenty-three letterforms over a blue field with red and white stripes.

The origin of the *pot cassé* trademark (Fig. 7–24), which quickly became a symbol for the fresh currents of the French Renaissance, is poignant. On 25 August 1522, Tory's ten-year-old daughter Agnes died suddenly. The devastated father wrote and published a poem in her memory. At the end of the text, the first engraving of the *pot cassé* appears. This shattered antique urn, chained to a closed, locked book and bearing the inscription *non plus* ("no longer," or "nothing more"), seems to symbolize the death of his daughter. This association is strengthened by the small winged figure in the upper right corner, a detail that had been cut away from the woodblock by the time this same cut was used in a book published by Tory a year later.

Nothing captured the imagination of French printers as did several series of initials designed by Tory. Roman capital initials (Fig. 7–25) are set into black squares that come alive with meticulous floral designs and *criblé*. Along with matching printer's ornaments and headpieces, these initials were the perfect accompaniment for the lighter new roman types by Garamond. Tory's influence gained momentum in 1525, when he initiated a series of *Horae* (Book of Hours) (Fig. 7–26), printed for him by Simon de Colines, that set the style for the era. A new clarity of thought, an innovative attitude toward form, and a precise harmony of the various elements—text, capital initials, borders, and illustrations—mark the 1525 *Horae* as a milestone in graphic design. The patchwork quilt of woodblocks filling the space of earlier Books of Hours became passé. A light, delicate effect was achieved in the complex illustrations and ornamental borders because Tory used a fine contour line with air flowing around and within his graceful curves. The texture and tone of these visual elements echo the typographic lightness. Tory selected a size and weight of initial that added just the right darker accent, and he used outline initials with his headings. He cut the woodblocks for these borders and illustrations himself. The creative momentum in publishing and graphic design had now passed to France, and King Francis I honored Tory's contribution by naming him *imprimeur du roi* (printer to the king) in 1530.

7–24. Geoffroy Tory, pot cassé emblem, 1524. Later, Tory explained that the broken jar symbolized one's body, the toret or auger symbolized fate, and the book held shut by three padlocked chains signified the book of a life after it is shut by death.

7–25. Geoffroy Tory, capital from a series of *criblé* initials, c. 1526. Engraved for Robert Estienne, this alphabet of roman capitals brought elegance and "color" to the pages of books printed at Estienne's press.

7–26. Geoffroy Tory, pages from *Horae in Laudem Beautissimae Virginis Mariae* (Hours of Our Excellent Virgin Mary), 1541. A set of border components, filled with plant and animal motifs, are combined and recombined throughout the book. The open line quality facilitates the application of color by hand. The crowned F in the bottom center of the left-hand page is an homage to King Francis I.

7–27. Geoffroy Tory, pages from *Champ Fleury*, 1529. This double-page spread discusses how the Roman philosophers, poets, and orators live in spirit through the power of the Roman letters. It is illustrated by woodcuts of mythological subjects about which we have knowledge through the alphabet. The final paragraph of this "second book" introduces the "third book," the construction of roman letters, with an illustration showing the construction of an A from three I's.

Tory's *Champ Fleury* (subtitled *The art and science of the proper and true proportions of the attic letters, which are otherwise called antique letters, and in common speech roman letters*), first published in 1529 (Fig. 7–27), was his most important and influential work. It consists of three books. In the first, he attempted to establish and order the French tongue by fixed rules of pronunciation and speech. The second discusses the history of roman letters and compares their proportions with the ideal proportions of the human figure and face. Errors in Albrecht Dürer's letterform designs in the recently published *Underweisung der Messung* are carefully analyzed, then Dürer is forgiven his errors because he is a painter; painters, according to Tory, rarely understand the proportions of well-formed letters. The third and final book offers instructions in the geometric construction of the twenty-three letters of the Latin alphabet on background grids of one hundred squares (Fig. 7–28). It closes with Tory's designs for thirteen other alphabets, including Greek, Hebrew, Chaldean, and his fantasy style made of hand tools (Fig. 7–29).

Champ Fleury is a personal book written in a rambling conversational style with frequent digressions into Roman history and mythology. And yet its message about the Latin alphabet influenced a generation of French printers and punch cutters, and Tory became the most influential graphic designer of his century.

During the 1530s and 1540s, Robert Estienne achieved a wide reputation as a great printer (Fig. 7–30), renowned for the scholarship and intellectual acumen that he brought to the editorial process. During the same time, Colines earned a similar reputation based on the elegance and clarity of his book designs (Fig. 7–31). Illustrated title pages, typographic arrangements, ornaments and borders, and fine presswork contributed to this reputation.

Claude Garamond was the first punch cutter to work independently of printing firms. His roman typefaces (Fig. 7–32) were designed with such perfection that French printers in the sixteenth century were able to print books of extraordinary legibility and beauty. Garamond is credited, by the sheer quality of his fonts, with a major role in eliminating Gothic styles from compositors' cases all over Europe, except in Germany. Around 1510 Garamond apprenticed as a punch cutter under Antoine Augereau. Just how much credit for the evolution of roman type should go to Augereau, whose religious beliefs led him to the gallows in 1534, to Geoffroy Tory, with whom Garamond worked around 1520, and to Garamond himself is somewhat unclear.

Around 1530 Garamond established his independent type foundry to sell to printers cast type ready to distribute into the compositor's case. This was a first step away from the "scholar-publisher-typefounder-printer-bookseller," all in one, that began in Mainz some eighty years earlier. The fonts Garamond cut during the 1540s achieved a mastery of visual form and a tighter fit that allowed closer word spacing and a harmony of design between capitals, lowercase letters, and italics. These types permit books such as the French-language *Poliphili*, printed by Jacques Kerver in 1546, to maintain their status as benchmarks of typographic beauty and readability to this day. The influence of writing as a model diminished in Garamond's work, for typography was evolving a language of form rooted in the processes of making steel punches, casting metal type, and printing instead of imitating forms created by hand gestures with an inked quill on paper. When Garamond died in poverty at age eighty-one, his widow sold his punches and matrixes. No doubt this contributed to the wide use of his fonts, which remained a major influence until the late 1700s.

Oronce Finé (1494–1555) was a mathematics professor and author whose abilities as a graphic artist complemented his scientific publications. In addition to illustrating his own mathematics, geography, and astronomy books, Finé became interested in book ornament and design. His contemporaries had equal admiration for his contributions to science and graphic arts. He worked closely with printers, notably Simon de Colines, in the design and production of his books (Fig. 7–33). Also, he made an excellent

contribution as an editor and designer involved in numerous other titles. While Tory's inspiration is evident, Finé's mathematical construction of ornaments and the robust clarity of his graphic illustration are the work of an innovative graphic designer.

During the 1540s Robert Estienne was caught up in the turmoil of the Reformation. The protection King Francis I (1494–1547) provided for his “dear printer” ended with the king's death, and Estienne's work as a scholar and printer of “pagan-language” Latin, Greek, and Hebrew Bibles incurred the wrath of Catholic theologians at the Sorbonne, who suspected that he was a heretic. After a 1549 visit to Geneva, Switzerland, to meet Protestant Reformation leader John Calvin (1509–64), Estienne began careful preparations to move his printing firm to that city the following year.

7–28. Geoffroy Tory, construction of the letter Q from *Champ Fleury*, 1529. Tory used five compass centers in his effort to construct a geometrically ideal roman O, and he used an additional two compass centers to add a tail for the Q.

7–29. Geoffroy Tory, fantastic alphabet from *Champ Fleury*, 1529. The thirteen alphabets concluding this book (Hebrew, Greek, Persian, and so on) included this whimsical sequence of pictorial letterforms composed of tools. A is a compass, B is a fusy (steel used to strike a flint to start a fire), and C is a handle.

7–30. Robert Estienne, page from Paolo Giovio's *Vitae Duodecim Vicecomitum Mediolani Principum* (Biography of Twelve Early Milanese), 1549. Estienne used Garamond's roman fonts and Geoffroy Tory's initials in this book. Headings are set in one line of letterspaced capitals and two lines of lowercase.

7–31. Simon de Colines, title page for *De Natura Stirpium Libri Tres*, 1536. The typography is surrounded by an illustration that takes great liberties with natural scale and perspective to create a joyous interpretation of the natural bounty of the earth's flora.

Comparison of the editions of *Poliphili* printed by Jacques Kerver (Figs. 7–34 and 7–35) during the middle of the sixteenth century with Manutius's 1499 edition (see Figs. 7–15, 7–16, and 7–17) shows just how rapidly the French Renaissance printers expanded the range of book design. Manutius produced his *Poliphili* with a single size of roman type and used capitals as his only means of emphasis; Kerver had a large range of roman and italic type sizes for his page designs. Manutius used a set of ornamental initials and little starlike ornaments; Kerver selected from an elegant stock of headpieces, tailpieces, and printers' flowers to embellish the printed page. The illustrations in Manutius's *Poliphili* used a monotone contour line; Kerver's illustrator achieved a broad range of tonal effects. A fully developed title page in the Kerver editions set the tone for his volume.

Early typographic books in each European country had an identifiable national style. The unified structure and tone of the French book produced during the golden age of French typography was admired throughout the continent. As Garamond-derived type fonts and Tory-inspired initials and ornaments became available throughout Europe, printers began to emulate the light elegance and ordered clarity of Parisian books. As a result, the first international style of typographic design flourished as the dominant graphic theme of the sixteenth century.

Basel and Lyons become design centers

Scholarship and book production flourished in many cities, but only a few—notably Nuremberg, Venice, and Paris—emerged as centers for design innovation. During the 1500s Basel, which became a part of Switzerland in 1501, and Lyons, a French city located 300 kilometers (180 miles) southwest of Basel, developed into major centers for graphic design. Printers in the two towns enjoyed a lively exchange. Types, woodcut borders, and illustrations from Basel were on many Lyons presses, and Lyons printers often produced editions for their busy Basel counterparts. Johann Froben (1460–1527) came to the

sophisticated college town of Basel to attend the university, then began to print there in 1491. He became Basel's leading printer and attracted the outstanding humanist scholar of the Northern Renaissance, Desiderius Erasmus (1466–1543), to the city. For eight years, beginning in 1521, Erasmus worked with Froben as author, editor, and adviser on matters of scholarship. Unlike most of his German contemporaries, Froben favored hearty, solid roman types rather than Gothics.

A twenty-three-year-old painter, Hans Holbein the Younger (1497–1543), arrived in Basel from Augsburg in the autumn of 1519. He was received as a master in the Zum Himmel guild and was engaged by Froben to illustrate books. His border designs were sculptural and complex and often included a scene from the Bible or classical literature. His prolific designs for title pages (Fig. 7–36), headpieces, tailpieces, and sets of illustrated initials ranged from the humorous (peasants chasing a fox), to genre (dancing peasants and playing children), to a morbid series of initials depicting the Dance of Death. Before leaving for England in 1526, Holbein was probably already working on his greatest graphic work, the forty-one woodcuts illustrating *Imagines Mortis (The Dance of Death)* (Fig. 7–37). The Dance of Death, a procession in which skeletons or corpses escort the living to their graves, was a major theme in the visual arts as well as in music, drama, and poetry. This use of art as an ominous reminder to the unfaithful of the inevitability of death originated in the fourteenth century, when the great waves of plague swept over Europe. By separating the procession into individual scenes, Holbein was able to intensify the suddenness and personal tragedy of death. Numerous editions were printed from the blocks engraved by Hans Lutzelburger after Holbein's drawings.

After Froben's death, Johann Oporinus became Basel's leading printer. His masterpiece was the enormous 667-page folio *De Humani Corporis Fabrica (Construction of the Human Body)* (Fig. 7–38) by the founder of modern anatomy from Brussels, Andreas Vesalius (1514–64). This important book is illustrated by full-page woodcuts of remarkable clarity and accuracy by artists working from dissected corpses under Vesalius's supervision. Many of the anatomical figures are gracefully posed in landscapes. Oporinus set Vesalius's turgid, wordy text in tight pages of roman type with precise page numbers, running heads, marginal notes in delicate italic type, and no paragraph indications. If imitation is the sincerest form of flattery, *De Humani Corporis Fabrica* ranks as a great book, for it was pirated, translated, reprinted, copied, and abridged by printers all across Europe. In fact, King Henry VIII of England ordered the production of an English pirated edition in 1545. Its carefully executed, copperplate-engraved illustrations—copied from the original woodcut title page and illustrations—mark this copy as the first successful book with engraved illustrations.

7–32. Robert Estienne, opening page from *Illustrissimae Galliarum Reginae Helianorae (Famous Gallic Queen Helianorae)*, 1531. It is believed that the types used in this book are made from Claude Garamond's early type punches and matrices.

7–33. Simon de Colines (printer) and Oronce Finé (designer), title page for Finé's *Arithmetica*, 1535. In this title-page border, Finé used carefully measured strapwork, symbolic figures representing areas of knowledge, and a criblé background. De Colines's typography combines with this border to create a masterpiece of Renaissance graphic design.

7–34. Jacques Kerver, title page from *Poliphili*, 1561. A satyr and a nymph eyeing each other amidst an abundant harvest give the reader a glimpse of the pagan adventures within the book.

7–35. Jacques Kerver, typographic page from *Poliphili*, 1561. Bracketed by white space, Kerver's heading uses three sizes of capital and lowercase type, all capitals, and italic to bring variety to the design.

7–36. Johann Froben (printer) and Hans Holbein (illustrator), title page for Sir Thomas More's *Utopia*, 1518. Complex in image and tone, this title-page design unites the typography with the illustration by placing it on a hanging scroll.

In Lyons, most of the forty printers churned out such routinely designed material as popular romances for the commercial market using Gothic type. In 1542 Jean de Tournes (1504–64) opened a firm in Lyons and began to use Garamond types with initials and ornaments designed by Tory. But de Tournes was not content to imitate Parisian graphic design; he retained his fellow townsman, Bernard Salomon, to design headpieces, arabesques, *fleurons* (printers' flowers), and woodblock illustrations. The excellent book design of these collaborators was further enhanced (Fig. 7–39) when they were joined by a Parisian type designer working in Lyons, Robert Granjon (d. 1579), who married Salomon's daughter Antoinette.

7–37. Joannes Frellonius (printer) and Hans Holbein the Younger (illustrator), pages from *Imagines Mortis* (The Dance of Death), 1547. The terror of a child suddenly taken from his home by death is in striking contrast to the modest illustration size (6.65 centimeters, or 2 inches) and the understated elegance of Frellonius's typography.

7–38. Johann Oporinus (printer), page from *De Humani Corporis Fabrica*, 1543. Anatomical illustrations of skeletons and muscles in appear natural poses throughout.

The most original of the designers inspired by Garamond's roman faces, Granjon created delicate italic fonts featuring beautiful italic capitals with swashes. Books set in italic lowercase had been using regular capitals. Granjon attempted to add a fourth major style—in addition to Gothic, roman, and italic—when he designed and promoted the *caractères de civilité* (characters of civility) (Fig. 7–40), a typographic version of the French secretarial writing style then in vogue. The distinctive appearance of these typefaces with flamboyant cursive ascenders was insufficient compensation for their poor legibility. Therefore, *civilité* was just a passing fancy. The *fleurons* designed by Granjon were modular and could be put together in endless combinations to make headpieces, tailpieces, ornaments, and borders. Garamond's type designs were so beautiful and legible that for two hundred years, from about 1550 until the mid-1700s, most typeface designers followed Granjon by merely refining and altering Garamond's forms.

On 1 March 1562, a conflict between French troops and a reformed church congregation ended in a massacre. This began four decades of religious wars that effectively ended the golden age of French typography. Many Huguenot (French Protestant) printers fled to Switzerland, England, and the Low Countries to escape religious strife, censorship, and rigid trade laws. Just as the momentum for innovative graphic design had moved from Italy to France, it now passed from France into the Low Countries, especially the cities of Antwerp and Amsterdam.

A serious arm injury in the early 1550s ended the bookbinding career of Christophe Plantin (1514–89). Thus he changed his career to printing in midlife, and the Netherlands found its greatest printer. Plantin was born in a rural French village near Tours, apprenticed as a bookbinder and bookseller in Caen, then set up shop in Antwerp at age thirty-five. While de Tournes's dedication to quality and unsurpassed design standards have led many authorities to proclaim him the sixteenth century's best printer, Plantin's remarkable management sense and publishing acumen could earn him the same accolade for different reasons. Classics and Bibles, herbals and medicine books, music and maps—a full range of printed matter—poured from what became the world's largest and strongest publishing house. However, even Plantin got into trouble during this dangerous time for printers. While he was in Paris in 1562 his staff printed a heretical tract, and his assets were seized and sold. He recovered much of the money, however,

and within two years was reorganized and again solvent. Plantin's design style (Fig. 7–41) was a more ornamented, weightier adaptation of French typographic design.

Granjon was called to Antwerp for a period as type designer in residence. Plantin loved Granjon's fleurons and used them in profusion, particularly in his ever-popular emblem books. He published fifty emblem books containing illustrated verses or mottos for moral instruction or meditation. Plantin secured numerous punches and types at the estate sales of Colines and Garamond. Under the patronage of King Phillip II of Spain, he published the second great Polyglot Bible (Fig. 7–42) between 1569 and 1572. This eight-volume work almost bankrupted him when the promised patronage was slow to materialize.

The use of copperplate engravings instead of woodcuts to illustrate his books was Plantin's main design contribution. He commissioned masters of this flourishing printmaking medium to design title pages and to illustrate books. Soon engraving was replacing the woodcut as the major technique for graphic images throughout Europe. After Plantin's death his son-in-law, John Moretus, continued the firm, which remained in the family until 1876, when the town of Antwerp purchased it and turned this amazing house and printing firm into a unique museum of typography and printing, containing two presses dating from Plantin's time.

The seventeenth century

After the remarkable progress in graphic design that took place during the brief decades of the incunabula and the exquisite typography and book design of the Renaissance, the seventeenth century was a relatively quiet time for graphic design innovation. An abundant stock of ornaments, punches, matrixes, and woodblocks from the 1500s was widely available, so there was little incentive for printers to commission new graphic materials. An awakening of literary genius occurred during the seventeenth century, however. Immortal works by gifted authors, including the British playwright and poet William Shakespeare (1564–1616) and the Spanish novelist, playwright, and poet Miguel de Cervantes Saavedra (1547–1616), were widely published. Unfortunately, similar innovation was lacking in the graphic arts. There were no important new layout approaches or typefaces to provide a distinctive format for outstanding new literature.

Printing came to the North American colonies when a British locksmith named Stephen Daye (c. 1594–1668) contracted with a wealthy dissenting clergyman, Reverend Jesse Glover, to sail with him to the New World and establish a printing press. Glover died during the sea voyage in the autumn of 1638 and was buried at sea. Upon arrival in Cambridge, Massachusetts, Glover's widow, Anne, set up the printing office assisted by Daye, and thus was the first printer in the colony. She later married the president of Harvard College and sold the press to Daye. The first printing was done in early 1639, and the first book to be designed and printed in the English American colonies was *The Whole Book of Psalmes* (now called *The Bay Psalm Book*) of 1640 (Fig. 7–43). As the title page, with its dominant word *whole* and border of cast metal printers' flowers, demonstrates, the design and production of this volume was diligent but understandably lacking in refinement. Stephen's son Matthew, who was second in charge and had apprenticed in a Cambridge, England, printing shop before sailing to America, probably did the typesetting and took responsibility for the design of the broadsides, books, and other matter produced at this press.

7–39. Jean de Tournes (printer) and Bernard Salomon (illustrator), pages from Ovid's *La vita et metamorfoseo* (*Metamorphoses*), 1559. Three tonal qualities—Salomon's border designs, his denser illustrations, and Granjon's italics echoing the borders' flowing curves—are used by de Tournes with just the right amount of white space.

7–40. Robert Granjon, title page for *Le premier livre des narrations fabuleuses* (The First Book of Fabulous Stories), 1558. The script

letterforms are Granjon's caractères de civilité, which were used for the entire text of this 127-page book. The serpent device, elegantly bracketed by the motto in roman capitals, is Granjon's trademark.

7–41. Christophe Plantin, title page for *Centum Fabulae ex Antiquis* (A Hundred Old Stories), by Gabriello Faerno, 1567. Dignified and architectural, this title page is typical of the Plantin house style.

7–42. Christophe Plantin, page from the Polyglot Bible, 1569–72.

A double-page format, with two vertical columns over a wide horizontal column, contained the Hebrew, Latin, Aramaic, Greek, and Syriac translations of the Bible.

7–43. Stephen and Matthew Daye, title page for *The Whole Booke of Psalmes*, 1640. In the title typography, a rich variety is achieved by combining three type sizes and using all capitals, all lowercase, and italics to express the importance and meaning of the words.

7–44. Abraham Bosse, *Printing Shop—The Plate Printer*, 1642. A convincing range of lights and darks is built from scratched lines.

In spite of strong censorship and a stamp tax on both newspapers and advertising, printing grew steadily in the colonies. By 1775 there were about fifty printers in the thirteen colonies, and they fueled the revolutionary fever that was brewing. Just as printing had hurled Europe toward the Protestant Reformation during its early decades, it now pushed the American colonies toward revolution.

Copperplate engraving continued to grow in popularity as technical refinements greatly increased its range of tone, textures, and detail. Independent engraving studios were established, as shown in the combined etching and engraving by Abraham Bosse (1602–76) illustrating the plate printers in his printing shop (Fig. 7–44). In addition to fulfilling commissions for copperplate engravings to be bound into books as illustrations, these studios produced engravings to hang on the wall. This enabled persons who were unable to afford oil paintings to have images in their homes. Broadsheets, advertising cards, and other printed ephemera were produced by the engraving studios. The wonderful imagination that was sometimes displayed is seen in the set of engravings called *The Trades* (Fig. 7–45), originally created by N. de Larmessin in 1690. The tools or products of each trade were turned into lavish costumes on the figures. The nature of engraving—scratching fine lines into metal—encouraged the development of script letterforms of extreme fineness and delicacy, used with meticulously detailed illustrations.

7–45. After N. de Larmessin, "Habit de rotisseur," (The Butcher's Clothes), from *The Trades*, 1690. A stately symmetry and somber reserve intensify the outrageous humor of this image.

7–46. Jan Jacob Schipper, page from *Calvin's Commentary*, 1667. Using types designed by Christoffel van Dyck, Schipper's mixture of sizes, letterspacing, and leading in the heading material is an excellent representation of the baroque sensibility.

During the seventeenth century the Netherlands prospered as a mercantile and seafaring nation. Books became an important export commodity as a result of the accomplishments of yet another dynasty of printers, founded by Louis Elzevir (1540–1617). Their handy and practical little volumes had solid, legible

Dutch type surrounded by economically narrow margins, and featured engraved title pages. Competent editing, economical prices, and convenient size enabled the Elzevirs to expand the book-buying market. Dutch, English, French, German, and Latin books were printed and exported throughout Europe. Their format designs were amazingly consistent, leading one prominent printing historian to declare that if you have seen one, you have seen them all. Many of their types were designed by the great Dutch designer and punch cutter Christoffel van Dyck. Designed to resist the wear and tear of printing, his types had stubby serifs with heavy bracketing (the connecting curves that unify the serif with the main stroke of the letter) and fairly stout hairline elements (Fig. 7-46). Van Dyck's 111 matrixes and types were used continuously until 1810, when the fashion for the extreme thicks and thins of modern-style types unfortunately led the Haarlem foundry that owned them to melt them down to reuse the metal.