
The Phenomenon of the *Gros Canon*

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IN the history of typography, the emergence of the earliest display roman, known by its size as a *gros canon*, was a “phenomenon” in most of the senses of that word. Looking like a text roman writ large, it blended harmoniously with other fonts at the same time it was distinguished by its size. First used in Paris in 1530 by the young printer, Robert Estienne, it rapidly became a hallmark of the Parisian printing of the period. It can be found in the Latin of the scholarly books published by Simon de Colines and in the French of the popular works put out by Denys Janot. Publishers outside Paris wanted it, too: within a short time, copies of the font were in the hands of printers working in Lyons and Poitiers. International dissemination began with a version cut by Guillaume Le Bé in the late 1540s for use in Italy. And matrices for a better-known version cut by Claude Garamond later were sold by Christopher Plantin to printers of diverse nations at the Frankfurt Book Fair. Its widespread use ultimately “canonized” the *gros canon*, making it part of an international idiom for typographic communication.

Despite its significance in the history of typography, relatively little has been written about this font. While the date of its introduction is firmly established, the identity of its punchcutter remains unresolved. Its graphic features have never been systematically assessed, nor has its relation to subsequent display romans been firmly established. Certainly there are some good reasons for this. While he spoke in his prefaces about other aspects of his work as a publisher, Robert Estienne was

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PBSA 99:2 (2005): 231–63

silent on the font he first used.¹ Direct evidence (if it ever did exist) has been obliterated by time. And the situation surrounding the early development of the font also is astonishingly complex, involving the ideas and accomplishments of some of the most important punchcutters and printers of the period. Thus when scholars have addressed the genesis and remarkable fecundity of the *gros canon*, they often have had to resort to deductive reasoning and strings of associations.

In modern discussions of the font, most scholars have followed British type historian Stanley Morison in viewing the creation of the *gros canon* as part of a wave of Parisian interest in the types of the Venetian printer, Aldus Manutius.² Aldus's books were widely known, and some were circulated and read throughout Europe.³ For those with an interest in the design of romans, Aldus's font effectively constituted an inescapable influence. Morison, however, dated the beginnings of the French response to Aldus's roman to a period some three decades after its introduction. He argued that the interest of the French court, then under Francis I, in the arts of the Italian Renaissance was the impetus for this development. He also viewed the publication of Geoffroy Tory's *Champ Fleury* in 1529 as instrumental in initiating an era of typographic change in Paris. Tory's treatise,⁴ dedicated in part to the pronunciation and use of the French language, culminates in discussion of the formation of roman capitals by geometric means. His models for the capitals, set within a modular grid, displayed an approach to their construction that was unique to Tory, and his commentary critiqued the parallel efforts of

1. The principal biographical study of Robert Estienne is Elizabeth Armstrong's *Robert Estienne, Royal Printer* ([Abingdon, England]: Sutton Courtenay, 1986). The two principal bibliographies are A. A. Renouard's *Annales de l'imprimerie des Estienne* (Geneva: Slatkine Reprints, 1971) and Fred Schreiber's *The Estiennes, An Annotated Catalogue of 300 Highlights of Their Various Presses* (New York: E. K. Schreiber, 1982).

2. See, for example, Morison's discussion of "The 'Garamond' Roman" in *A Tally of Types* (Boston: David R. Godine, Publisher, 1999), 64–6.

3. The principal modern study of Aldus Manutius is Martin Lowry's *The World of Aldus Manutius: Business and Scholarship in Renaissance Venice* (Ithaca, NY: Cornell Univ. Press, 1979).

4. Translated as Geoffroy Tory, *Champ Fleury* (New York: Dover Publications, 1967). The Library of Congress copies of Tory's original edition (Paris: Geoffroy Tory, 1529) and the 1927 Grolier Club facsimile are available as a CD (Oakland, CA: Octavo, 2003).

Pacioli, Dürer, and other painters and letterform theorists. Tory several times mentioned Aldus Manutius in *Champ Fleury*, although in the context of admiration for his italic, rather than roman type.⁵

The proximity of the publication of Tory's *Champ Fleury* in 1529 and the first use of the *gros canon* (and a text-size roman) by Robert Estienne in 1530 fused the two in some of the scholarly literature as cultural cause and effect. Scholars then began to query the identity of the punchcutter of Estienne's fonts. For many, the signs pointed to Claude Garamond. In the 1540s, for instance, with funds from the royal treasury at his disposal, Estienne contracted with Garamond to cut three sizes of the royal Greek types, by parallel suggesting that Garamond might earlier have cut the *gros canon* and others of Estienne's romans. Several italics Garamond cut for his own use and those of others in the 1540s he declared in a preface to have been based on the Aldine italic,⁶ suggesting again by parallel that Aldus's roman might earlier have been the model for Estienne's. For many scholars, the attribution was clinched by the recovery of a specimen of a *gros canon* clearly attributed to Garamond in the inventories of the Plantin-Moretus Museum in Antwerp.⁷

A précis of the consensus reasoning about the origin of the *gros canon* thus went something like this: initiating institution: the French court; causal aesthetic ideas: Geoffroy Tory's; agent in the creation of the *gros canon*: Robert Estienne; punchcutter: Claude Garamond; principal design influence: Aldus Manutius; material evidence of this: Plantin's attributed specimen of Garamond's *gros canon*, taken as identical with Robert Estienne's. It is an argument that seems to make sense intuitively. And there is historical evidence that substantiates each of the pieces within the chain of the logic. Yet what is striking is the absence of evi-

5. Ibid., 174. Tory's characterization of the "*Lettre Aldine*" on fol. LXXII^v ("*Elle est gratuite pource quelle est meigre comme est la lettre Grecque courant | & non Maiuscule.*") is sometimes read as referring to Aldus's roman. However both the inclusion of the category "*Lettre Romaine*" in a list in the preceding sentence and Tory's description of the letter as being "thin like the cursive Greek" point to Aldus's italic instead.

6. Translated in Paul Beaujon [hereafter, Beatrice Warde], "The 'Garamond' Types: Sixteenth and Seventeenth Century Sources Considered," reprinted in *The Fleuron Anthology* (Boston: David R. Godine, Publisher, 1979), 185.

7. Harry Carter's "The Types of Christopher Plantin" (*The Library*, 5th ser., 11, no. 3 (1956): 170–9) discusses Garamond's and others of Plantin's types and includes a broadsheet specimen.

dence actually linking many of its individual pieces. Inference instead fills those gaps. Geofroy Tory, for instance, can clearly be linked to the court: he served as Francis I's royal printer for French-language works from 1531 until his death in 1533. But it is more difficult to convincingly link Geofroy Tory with Robert Estienne: a richer set of connections links Tory with Simon de Colines, Estienne's stepfather. Tory's ties to the punchcutter Claude Garamond are fragile, as well, as is the crucial link to the model of Aldus's roman in the cutting of the *gros canon*.

It is intellectually disquieting to confront this, and it raises a foundational question about the construct. Is what appears to be a linked string of argumental pearls instead little more than a neatly aligned, but basically disjunct queue of them? An undercurrent of uncertainty and qualification developed within the literature on the *gros canon* and related French developments. Researchers from A. F. Johnson⁸ to Harry Carter⁹ began to bracket such assertions with caveats.

By far the most sophisticated attempt to fundamentally rethink the problem of the *gros canon* was made three decades ago by the Belgian scholar, H. D. L. Vervliet. His essay, "*Les canons de Garamont*,"¹⁰ highlighted a number of points of disjuncture in this argument about the origins of the font. Vervliet opened the essay by tracing the evolution of "*canon*" as the term for its size, and he discussed the precedent of several sets of smaller roman capitals popular among printers in the decades before the creation of the *gros canon*, contextualizing the French developments. But Vervliet also noted variations within the font itself, establishing the *gros canon* as a plural, rather than a singular phenomenon. He pointed out, for example, several small but discernible differences in the form of the *gros canon* used by Robert Estienne from 1530 and that used by Simon de Colines from 1536. He characterized both Guillaume Le Bé's and Claude Garamond's versions as distinct from earlier ones, and he mentioned yet others later cut by Pierre Haultin and other punchcutters.

Vervliet also systematically examined all that is known of the career of Claude Garamond, concluding that a reasonable understanding of its

8. Alfred F. Johnson, *Type Designs, Their History and Development* (London: Grafton, 1934), 62–4.

9. See Carter's note in Morison, 129–30.

10. Hendrik D. L. Vervliet, "*Les canons de Garamont, essai sur la formation du caractère romain en France au seizième siècle*," in *Refugium Animae Bibliotheca* (Wiesbaden: Guido Pressler, 1969), 481–500.

chronology eliminated Garamond as a candidate for the design and cutting of the original *gros canon* in the late 1520s. Given the level of mastery apparent in its design and execution, Vervliet trimmed a list of possible candidates to two, the first Simon de Colines, a punchcutter and printer by then at the height of his skills, and the second Antoine Augereau, whose text romans survived as testament to his ability as a punchcutter after his death in 1534 in the violent aftermath of the *Affaire des placards*.

Vervliet's essay is not as widely known as it should be, but one reason for its neglect in subsequent scholarship perhaps revolves around the manifold challenge it presented to the consensus narrative on the origin of the *gros canon*. In the decades that followed its publication, some scholars returned to that narrative.¹¹ Others brought forward new findings pertinent to the careers of particular punchcutters.¹² And the groundwork of the issues surrounding the creation of the *gros canon* shifted, too, as intellectual historians like Elizabeth Eisenstein revised the broader understanding of the role of master printers and other artisans in the transformation of early-modern European culture and society.¹³

At the same time, it has remained difficult to broach certain questions central to the phenomenon of the *gros canon*. The notion that Paris was swept by a late wave of Aldine fever in the 1530s, for instance, isn't borne out by the stylistic features of some of the French fonts. (Nor did Aldus himself, of course, ever use a big roman of the sort that appeared in Paris.) Because the features of the original font and those of later versions have not been catalogued, it has been impossible to reliably differentiate them and to demonstrate their relation to others. The massive body of work produced by Simon de Colines, one of the key figures in these developments, also has been only fragmentarily understood. The workings of Colines's relationship with his stepson, Robert Estienne, has been the subject of some speculation but relatively little evidentiary discussion. Nor is there a satisfying cultural explanation for the extraordinary success and widespread adaptation of the *gros canon*.

11. Nicolas Barker, "The Aldine Roman in Paris, 1530–34," *The Library*, 5th ser., 29, no. 1 (1974): 5–32.

12. William Kemp, "Latomus, F. Gryphe, Augereau and the Aldine Romans in Paris, 1531–33," *The Library*, 6th ser., 13, no. 1 (1991): 23–47.

13. Elizabeth Eisenstein, *The Printing Press as an Agent of Change: Communications and Cultural Transformations in Early-Modern Europe* (Cambridge: Cambridge Univ. Press, 1979).

What follows is offered in an effort to close some of the gaps in this knowledge by adding to it pertinent findings from a large and on-going study of the work of Simon de Colines. Some of these findings concern Colines's relations with Robert Estienne, Geofroy Tory, and others. The discussion includes stylistic analysis of the most important of the early fonts cut in this size and style.¹⁴ Addressing even the earliest iterations of the *gros canon* is challenging, involving as it does a six-way intersection of the ideas and work of Simon de Colines, Geofroy Tory, Robert Estienne, Antoine Augereau, Guillaume Le Bé, and Claude Garamond. Yet some facets of their contributions can be clarified and distinguished. Exploring this also helps to illuminate the cultural meaning of the *gros canon* in its own time, and the paper returns in the end to such issues.

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“...et durant son trauail à fait plusieurs poinçons et matrrices de lettres bien appropriées, comme *Lettres de gros Romain sur le blanc de lettres gottiques gros traict*...”¹⁵

Just a few minutes spent with the author of this sentence, Guillaume II Le Bé, might clarify what he meant when he said in 1643 that “during his career,” Simon de Colines “made a number of punches and matrrices for well cut types, such as big romans in the size of the bold blackletters.” Did Le Bé here intend “*Lettres de gros Romain*” as an umbrella phrase, one inclusive of type sizes like the *gros canon*? While tantalizing, it's unlikely that such a question can be answered with any certainty from this historical distance. And yet, as the oldest surviving account of French punchcutting, Le Bé's memorandum is just one of many things to suggest that the question of Simon de Colines's agency in the cutting of the first *gros canon* merits careful consideration.

Simon de Colines is first named in the annals of the history of the book in 1520.¹⁶ On the death of the Paris printer Henri Estienne in that

14. In a discussion of Robert Estienne's *gros canon*, H. D. L. Vervliet lists ten related fonts introduced between 1530 and 1571. See H. D. L. Vervliet, “Robert Estienne's Printing Types,” *The Library*, 7th ser., 5, no. 2 (2004): 121–4.

15. Harry Carter, ed., *Sixteenth-Century Typefounders: The Le Bé Memorandum*, Document Typographique Français III (Paris: André Jammes, 1957), 15.

16. The two principal bibliographies of Colines's work are Philippe Renouard, *Bibliographie des éditions de Simon de Colines, 1520–46* (Paris: Bibliothèque Nationale, 1894) and Fred Schreiber, *Simon de Colines, An Annotated Catalogue of 230*

year, Colines took up direction of Estienne's press, adding to his role as a punchcutter those of printer and bookseller, as well. Colines was certainly familiar with Henri Estienne's workshop on the rue St. Jean de Beauvais: the Le Bé memorandum and other things point to an earlier business relationship between the two men. In addition to new roles, Colines acquired a wife (Guyone Viart, Henri Estienne's widow, for the third time married a printer) and responsibility for the Estienne children including François, Robert, and Charles, each of whom was later to be involved in printing or publishing.

Like Henri Estienne before him, Colines was appointed as a *libraire juré*, a select printer-bookseller to the university in Paris. He worked mostly with faculty in the various colleges of the university, and he supplied books and some services to students. University printers in this period were subsidized in the sense that they were excused from some of the taxes paid by other businesses and citizens. But they also were obliged to meet the expectations of the faculty. Thus Colines inherited from Henri Estienne not just a workshop, but also authors and an editorial formula that had sustained the press in its output of eight to twelve books annually over the period of Henri Estienne's tenure.

Colines rapidly increased production at the press and he appears to have been comfortable with the risks and opportunities of innovation. He developed, for example, the concept of the book series, connecting texts on related subjects by the use of identical formats, title-page borders, and fonts. He made a range of inventive uses of such small formats as the octavo and sextodecimo, converting many bulky texts, including that of the Bible, to pocketable size. Reducing the sizes of books also reduced their costs to readers: two catalogues that survive from Colines's final years as a printer show his octavos and sextodecimos available at a modest fraction of the price of quartos and folios.¹⁷

Colines's expertise in typography was an essential instrument in these innovations. Tiny books, for instance, required tiny but legible romans (and later italics). Distinctive book series required unique title borders

Examples of his Press, 1520–1546 (Provo, Utah: Friends of the Brigham Young Univ. Library, 1995). Renouard's *Bibliographie* includes a brief professional biography of Colines, 439–74; and Schreiber's *Simon de Colines*, an introductory essay in both French and English by Jeanne Veyrin-Forrer, xiii–lxxxiv.

17. Both catalogues are reproduced in facsimile at the end of Schreiber's *Simon de Colines*.

and a graphic identity expressed in part through fonts. While the types Colines inherited from Henri Estienne were good ones, he nevertheless immediately began to make a series of improvements and additions to them, something that would continue through the end of his career in 1546.

The earliest typographic innovations found in Colines's books involved alteration and adaptation of extant fonts. From the mid-1520s, however, entirely new romans, and then italics and a Greek, appear in his books.¹⁸ The romans are of particular importance because their design began the shift toward the lighter weight and other graphic features associated with what is now called the French old style. The italics also were crucial to the modernization of French typographic style. Between 1528 and 1533 Colines introduced four different sizes in several styles, blending the features of italics earlier used by such printers as Aldus, Arrighi, and Tagliente. His 1528 Greek, the earliest of its kind to be cut in Paris, constituted an important contribution, as well, permitting a new interest in the original Greek of biblical, literary, and medical texts to more fully flourish in a Parisian setting.

Revision also changed the character of many of Colines's woodcut initials, the large capitals used in titles or at the beginning of sections of texts. By 1522, for example, Colines had converted a set of plain capitals to inline forms, the fresh strokes of white in their stems lightening the weight of the letters on the page. By 1526, lighter and more classically proportioned capitals began to join those in another set of initials. *Criblé* initials with a white-dotted, black background did not permit such improvements, but from 1522 Colines's books show a series of trials of new *criblé* initials. The design of the experimental initials was systematically simplified over time, ultimately resulting in new series of *criblé* capitals with classically proportioned white letterforms and Renaissance decorative motives, set against a stippled ground.

Geofroy Tory is likely to have been Colines's collaborator in the revision of these initials letters.¹⁹ Tory, who previously had edited books and taught at the university in Paris, recently had returned from a sojourn in

18. Kay Amert, "Origins of the French Old-Style: The Roman and Italic Types of Simon de Colines," *Printing History* 26/27, 13, no. 2 (1991) and 14, no. 1 (1992): 17–40.

19. The principal study of Tory is that of Auguste Bernard (1857). The second edition (1865) was translated by George B. Ives as *Geofroy Tory, Painter and Engraver, First Royal Printer, Reformer of Orthography and Typography Under François I* (Cambridge: Riverside Press, 1909; reprinted 1969).

Italy that acquainted him first-hand with the ideas and artistic practice of the Italian Renaissance. Upon his return, Tory established himself as a bookseller, taking a shop on the rue St. Jacques in the Latin Quarter. The emphasis of Tory's trade at that time seems to have been not the printed book, but rather the manuscript book, to which he brought skills as a calligrapher and painter.

In this era, knowledge of the practices used in the formation of large roman capitals belonged to painters. Holbein, Dürer, and Mantegna, for example, were all experts in their formation, with the principal applications found in the letters that distinguished their paintings. As the text of *Champ Fleury* later demonstrated, Geofroy Tory also was familiar with these practices and capable of providing advice to Colines on the presentation of such capitals in a different context, that of the printed book.

The striking resemblance between the capitals in a new set of *criblé* initials used by Colines and Robert Estienne from 1527 and those of Geofroy Tory's models for roman capitals in *Champ Fleury* has long been acknowledged by scholars. In an essay on Tory, A. F. Johnson, for example, characterized the similarity as an "exact" one.²⁰ Close comparison, however, reveals many differences of form. Letter heights, widths, and serifs vary. Even the ratio of 1 : 10 in stem width-to-height crucial to the formation of Tory's *Champ Fleury* capitals is treated in the *criblé* initials as a weightier 1 : 8.5. Despite this, the resemblance between the two sets of capitals is strong, and experiments with similar *criblé* and other initials found in Colines's work from 1522 do suggest Geofroy Tory's involvement in this endeavor. Other dimensions of the theory Tory developed in *Champ Fleury*, in particular the light 1 : 10 ratio for stems, figured later into the design plans for the original *gros canon*.

It was Robert Estienne who first used that roman in 1530, and it is to Estienne that its cutting by Claude Garamond is usually credited in the scholarship on the origins of the font. New understanding of the relationship between Robert Estienne and Simon de Colines, however, argues otherwise. Colines and Estienne worked together in the shop on the rue St. Jean de Beauvais until 1526. In that year, Colines, whose expanding operation likely had outgrown the space of that shop, moved into a new workshop a few doors away. Colines also had arranged for

20. Alfred. F. Johnson, "Geofroy Tory," in *Selected Essays on Books and Printing* (Amsterdam: Van Gendt, 1970), 173.

the marriage in that year of Robert Estienne and Perette Badius, daughter of another Paris *libraire juré*, Jodicus Badius.

Upon his marriage and Colines's removal, and with help from both fathers-in-law, Robert Estienne began a career as an independent printer that was to be one of the most distinguished of the era. Unlike Colines and Badius, the audiences for Robert Estienne's books were not principally university faculty and students, but rather younger students and the Paris community at large. From the outset Estienne published modest texts for adolescents and more substantial books destined for literate adults in wealthy households. His 1528 folio Bible is an example of the latter: much too expensive for students, and probably beyond the means even of most faculty, the Bible found its audience elsewhere in Paris.

Like Colines, the fonts that Robert Estienne used in his work included some that had been his father's. Because he kept an in-house foundry and had the ability to justify matrices, the appearance of these types often varies from that found in Henri Estienne's books. But it is also clear that Robert Estienne looked to Simon de Colines for new fonts to distinguish his work as a printer. The *saint augustin* used as the text roman in Estienne's first major project, the folio Bible produced in 1527–8, for instance, was in trial in Colines's books from 1526. It appears to have been turned over to Estienne for his use in 1527 and does not appear in Colines's work after 1530.

Robert Estienne may have had a motive for seeking exclusive use of a set of matrices for his work. Estienne's production methods as a printer, and the resulting printed "impression" he obtained, differ from those of other printers in this period. His inking is lighter, the "bite" of his type into paper is shallower, and his impression is notably crisp and clean. His books are refreshingly "modern" in this regard. But there is also a telling difference in the texture of the papers found in Robert Estienne's books. While he routinely used the fine Le Bé papers made in Troyes in his work, that paper has a different "hand" than it does in the books of Simon de Colines and other printers who used the same sheets. Its surface is smoother and the nap of the paper less evident. Taken together with the character of his inking and impression, this suggests Robert Estienne may have printed his papers dry, rather than damp, leaving the surface texture of the paper undisturbed.

The process of dampening (and then drying) sheets of paper in printers' workshops was something done to save wear on type: a damp-

ened sheet is softer and less likely to damage the relatively soft metal in which type is cast. Woodcut initial letters and illustrations also are vulnerable in the printing process. While few printers were willing to risk such damage, Robert Estienne may have been the exception to this rule. With an in-house foundry at his disposal, he had the capacity to cast as much fresh type as he wished, and the crisp appearance of the type in his books suggests that he did so much more often than printers who used traditional methods. Such a practice also may explain Estienne's preference, in the early years of his career, for *lettres d'attente*, or guide letters, over woodcut initial letters. Estienne also eschewed illustration in his work: only five of the hundreds of books he produced carry illustrations.²¹

Estienne's folio Bible of 1528²² in fact may stand as testimony to the perils of printing dry, rather than damp: while he had fresh new sets of woodcut *criblé* initials at the start, toward the end of that work, some of them were irreparably damaged. This highlights one of the advantages of initial letters and other display material that could be cast in lead, rather than cut from wood, and it brings us to the features of the first *gros canon*.

ESTIENNE'S "GROS CANON" (1530)

The original *gros canon* is a deceptively simple creature. On its face, it seems little more than a pleasant text roman, enlarged. At a structural level, however, it reveals itself as a font that incorporates a startlingly original combination of shapes and weights brought together in a dramatic design plan. The analytical rigor that undergirds the design of the font is striking: not only does it belie the comfortable familiarity of the face of the font, but it also reflects a kind of analysis of lowercase letterforms that was new at this time.

Roman capitals, with their inscriptional basis and intrinsic geometry, had long been analyzed as constructed forms, as products of the compass and straightedge.²³ Both the capitals and "minuscules," or lowercase forms, of such written letters as the *rotunda* and *textura* also had

21. Schreiber, *The Estiennes*, 94.

22. *Biblia*. Paris, Robert Estienne, 1528. See A. A. Renouard, *Annales*, 27 and Schreiber, *The Estiennes*, no. 37.

23. John Ryder's *Lines of the Alphabet in the Sixteenth Century* (London: The Stellar Press and the Bodley Head, 1965) lists the major sixteenth-century manuals and offers a précis of their content.

been subjected to constructional analysis in writing manuals. The lowercase forms of the roman, by contrast, remained unanalyzed from a structural perspective by the writing masters. Originally improvisations on the forms of the capitals, the roman minuscule evolved as a small scribal letterform that was directly borrowed, and in turn transformed, by punchcutters.

A punchcutter's working methods alone required close scrutiny of these forms. Conscious knowledge of the shapes of the letters and control of their heights, widths, and weights necessarily supplanted the intuitive methods of scribes, over time regularizing the appearance of the typographic roman. Regularization was carried yet further by such things as the use of counterpunches: the shapes of the counterforms or interior white spaces within groups of letters were made identical by their use.²⁴ By the time of the creation of the *gros canon*, these techniques had fostered a new kind of visual character within the printer's roman. It is this new and purely typographical character that is celebrated in the *gros canon*, and its apparent simplicity must have required every shard of art at the punchcutter's disposal.

The x-height of the font, for instance, is proportionately smaller than those of text romans and is identical to the height of the ascending and descending strokes of the lowercase, establishing a 1 : 1 : 1 relation among components in the vertical dimension of the font. The optical principle applied here — that increasing a type's size suggests proportionately decreasing its x-height — had earlier been applied in the design of text types. In small text romans, for example, this ratio often is found as 2 : 3 : 2, while in larger romans, it is often 4 : 5 : 4. The identity of x-height, ascender, and descender heights, however, is a feature new to the *gros canon*, one optically appropriate only because of its extreme size. This parity also created another kind of visual "regularity" that is absent in the smaller text sizes. Basically it established the primary vertical unit of division as thirds, with the smaller x-height characters occupying one-third and capitals and ascending and descending characters two-thirds of the thirty-eight point size of the font.

The weight of the *gros canon* also is extreme, much lighter than that of any text roman, and it differs between the capitals and the lowercase letterforms in the font. While the lowercase letterforms weigh in at a

24. Fred Smeijers's *Counterpunch* (London: Hyphen Press, 1996) explores the use of counterpunches and the implications of other aspects of punchcutting technique.

delicate 1 : 13, the capitals carry a weight of 1 : 10, the relation between stem width and height recommended by Geofroy Tory in his treatise, *Champ Fleury*. The shapes of the *gros canon* capitals, however, are significantly different from those devised by Tory. The pattern of their “stress,” or disposition of thick and thin stroke widths, is as vigorously vertical as it is oblique. The letterforms also are more tightly constrained in their widths than are Tory’s geometrically constructed capitals: the broadest of them fill a conceptual square and are as wide as they are tall, while most of the remaining letters are confined to widths equal to eleven- or nine-thirteenths of the width of that square, the fraction here identical with that found in the division of the lowercase stems.

It is probably no coincidence, either, that the size of the capital letters in the *gros canon* is nearly identical with that of the smallest woodcut capitals (twenty-seven points by modern standards) used by printers in this period. This was a multi-purpose size for initials, one capable of adaptation, for instance, as two-line initials with the largest text romans and as three-line initials with the smaller *philosophie*, a widely used, eleven-point type size. The identity of the size of the *gros canon* capitals with this initial letter size, taken together with the uniformity found in the widths of the capitals, suggest that the *gros canon* was conceived from the outset as a dual-use font, one capable of supplying both upper- and lowercase characters in display applications and, cast on a smaller body, free-standing capitals that could serve as initial letters. Robert Estienne often adapted the *gros canon* capitals as initials,²⁵ and his son, Henri II, can be found using them in this fashion decades later in his work as a printer in Geneva.

When the capitals and lowercase of the *gros canon* were combined, the internal structural “calculus” of the font was built upon a unique relation among thirds, tenths, and thirteenths. The subtlety of the scheme resides in the integration of both harmony and tension in this relation, something found elsewhere in the font in its simultaneous emphasis on unity and lively difference. A vertically-disposed ellipse, for example, is one of the negative forms that unify the design. Fully articulated in the counterforms of the capitals O and Q, this form also suggests the shapes of the C, D, and G and of smaller bowled or serpentine characters like the B, P, R, and S. The location of thin strokes at the top

25. Estienne’s 1532 and 1540 folio Bibles, for instance, show the *gros canon* in use as initial letters, as well as for various display purposes.

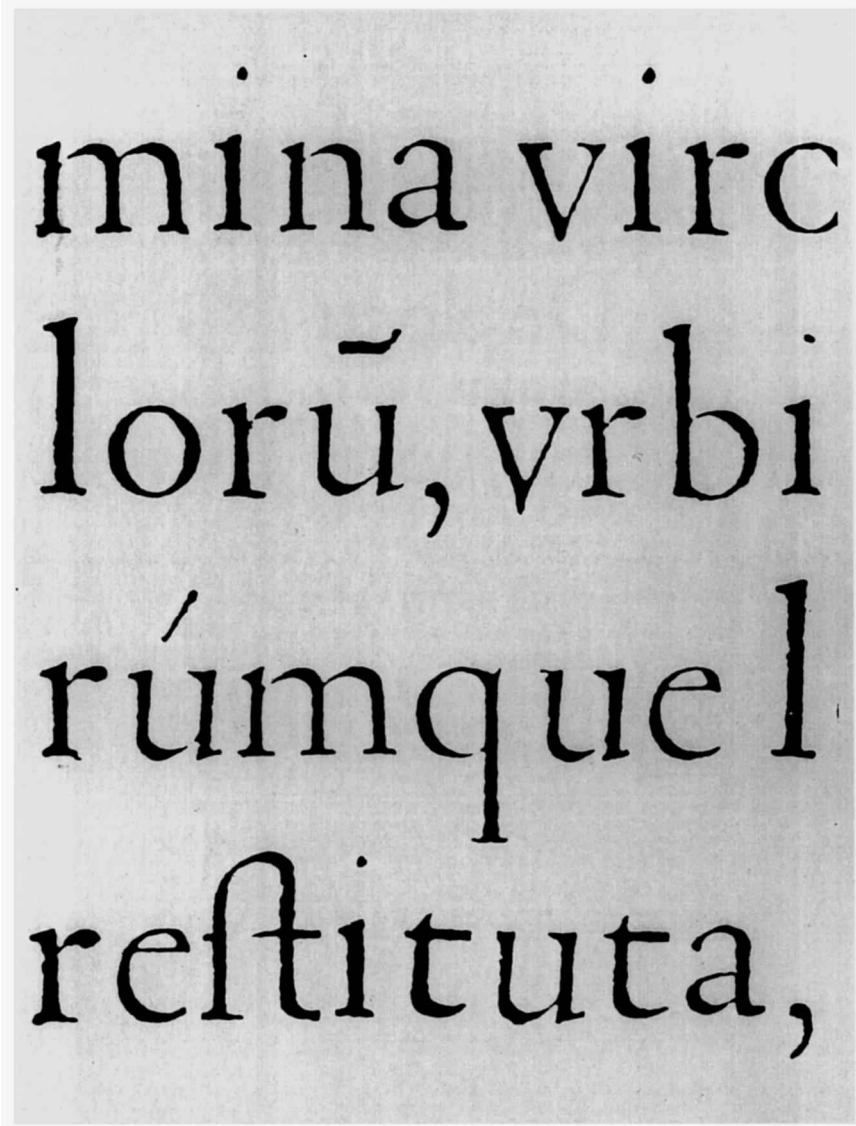
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Hellenismi ad Christi-
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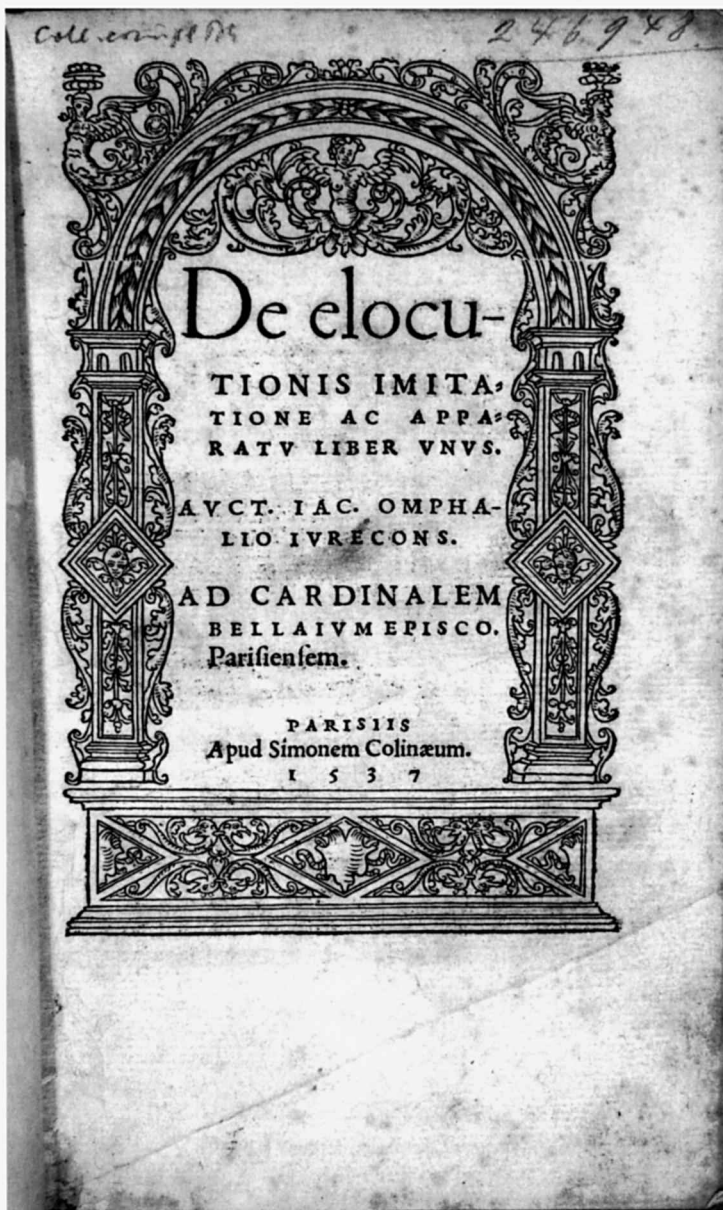


CHRYSTOMVS AV-
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nis, in epistolā Pauli ad Roma-
nos, laudationē diuini eius viri
scribens, ait se nō vereri Paulum
ipsum mundi cor appellare, in-
numerabilium bonorum fontē,
principium & elementum vitæ.
per quē deus (inquit) arcana mi-
randa effatus est, quōdque mirari possimus, maiora quam
per semetipsum. Hæc mēs diuini viri, immo verò hic ani-
mus vitæ, hæc mundi præcordia, dei sapientia perimbuta,
tincta, atque grauida, philosophiam theorix studiosam
magnopere locupletarunt, atque etiā maximopere. quip-
pe quæ cōmentationis rerum cælestium syluam, vastam,
densam, opacāque aperuerint: in qua sylua velut inda-
gine cōmentationis cingere cubile veritatis ipsius, sum-
mūq; boni legere vestigia possemus, in montē olympū fe-
rētia. Is porrò dei testimonio ornatus, quasi lectissimum
spiritus diuini, cælestisq; disciplinx cōceptaculū, & si-
mul spectatum assumptus adyta sapiētix, dignissimus est
vtique, cuius elogia & monumenta, qua de re nunc agi-
tur, instar sint apud mortales decuriæ vnus aut alterius
E.iii.

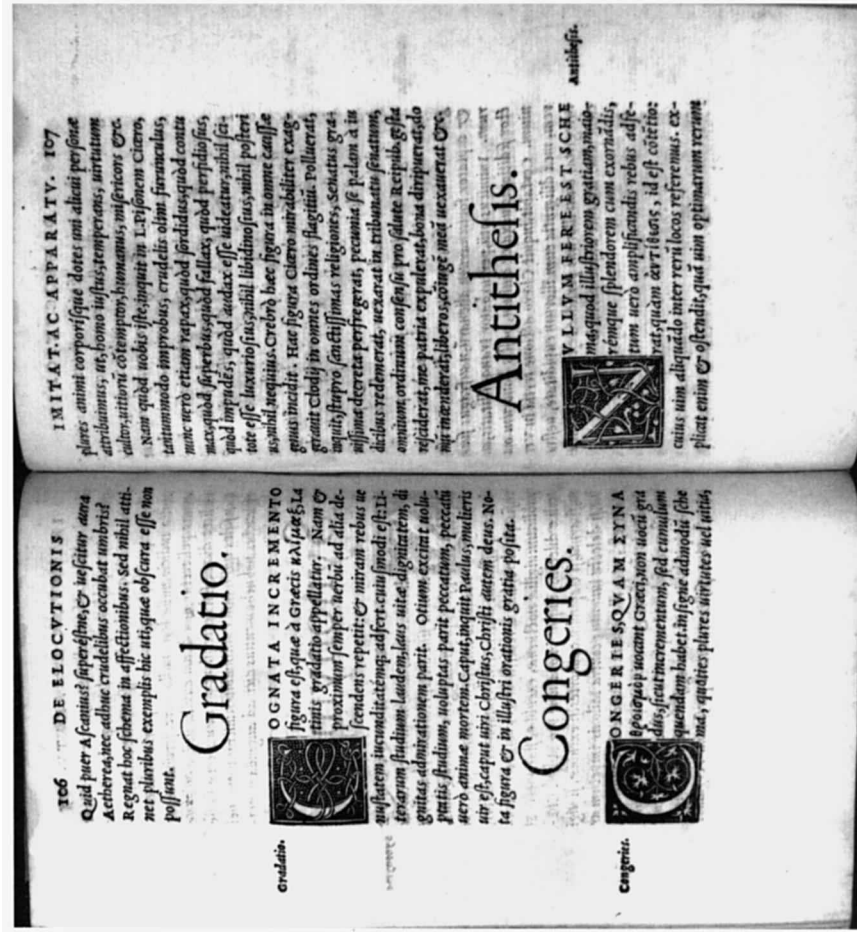
Illus. 1: Letterspaced *gros canon* capitals and lowercase at the head of a text page from Guillaume Budé, *De transitu hellenismi ad Christianismum* (Paris: Robert Estienne, 1535). Special Collections Department, University of Iowa Libraries, Iowa City, Iowa.



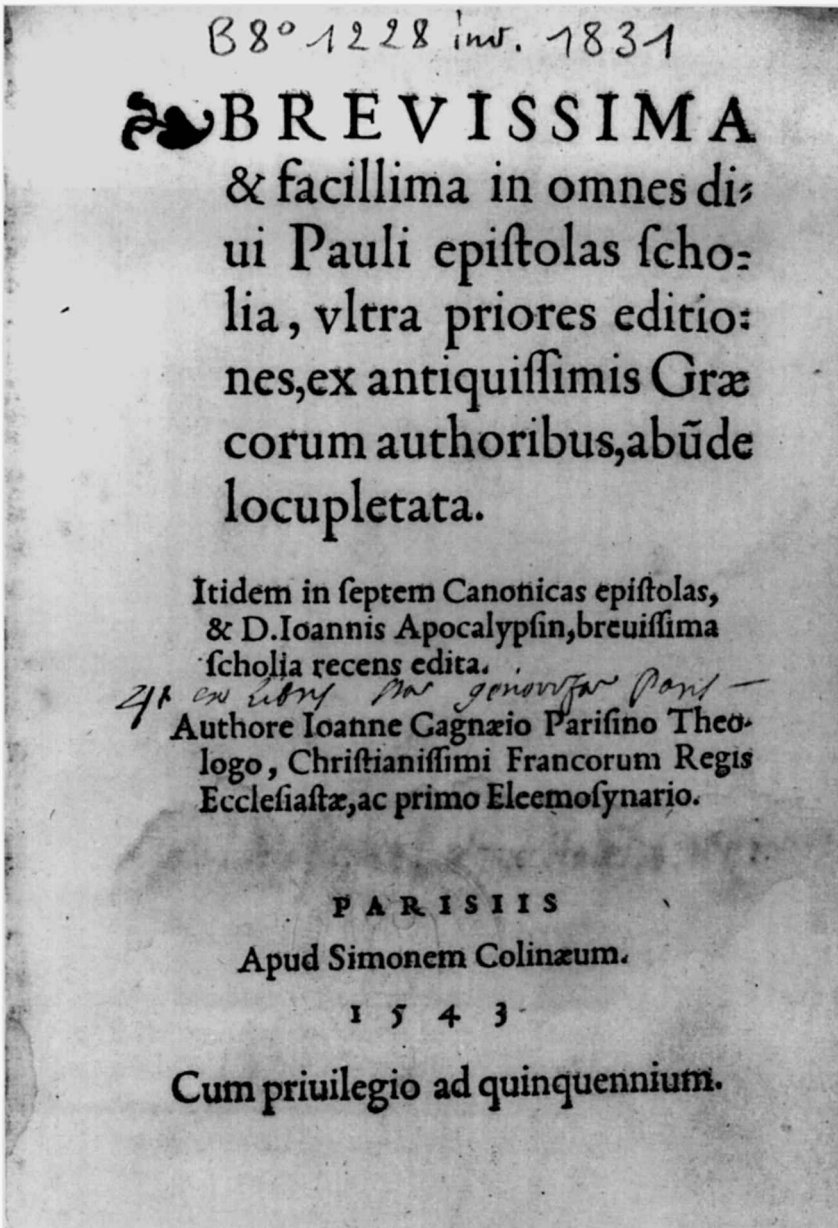
Illus. 2: Enlarged detail of the *gros canon* lowercase from *Biblia* (Paris: Robert Estienne, 1540). Special Collections Department, University of Iowa Libraries, Iowa City, Iowa.



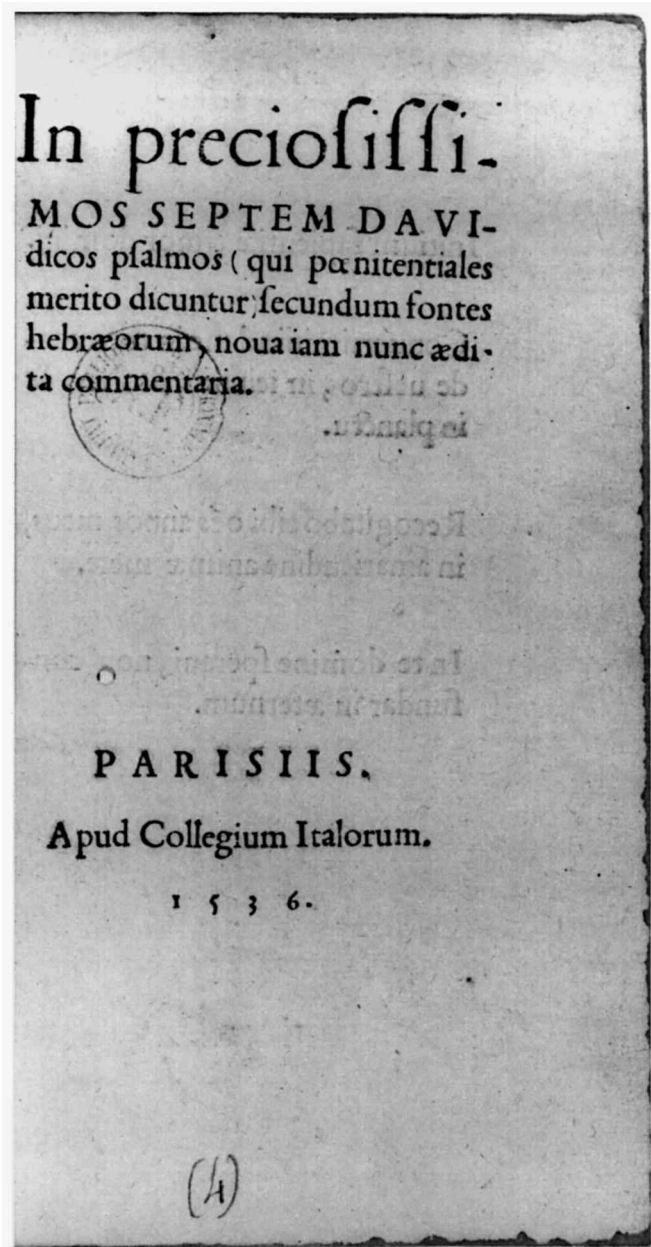
Illus. 3: Colines's second state of the *gros canon* at the head of the title-page of Jacques Omphalius, *De elocutionis* (Paris: Simon de Colines, 1537). John M. Wing Foundation on the History of Printing, The Newberry Library, Chicago.



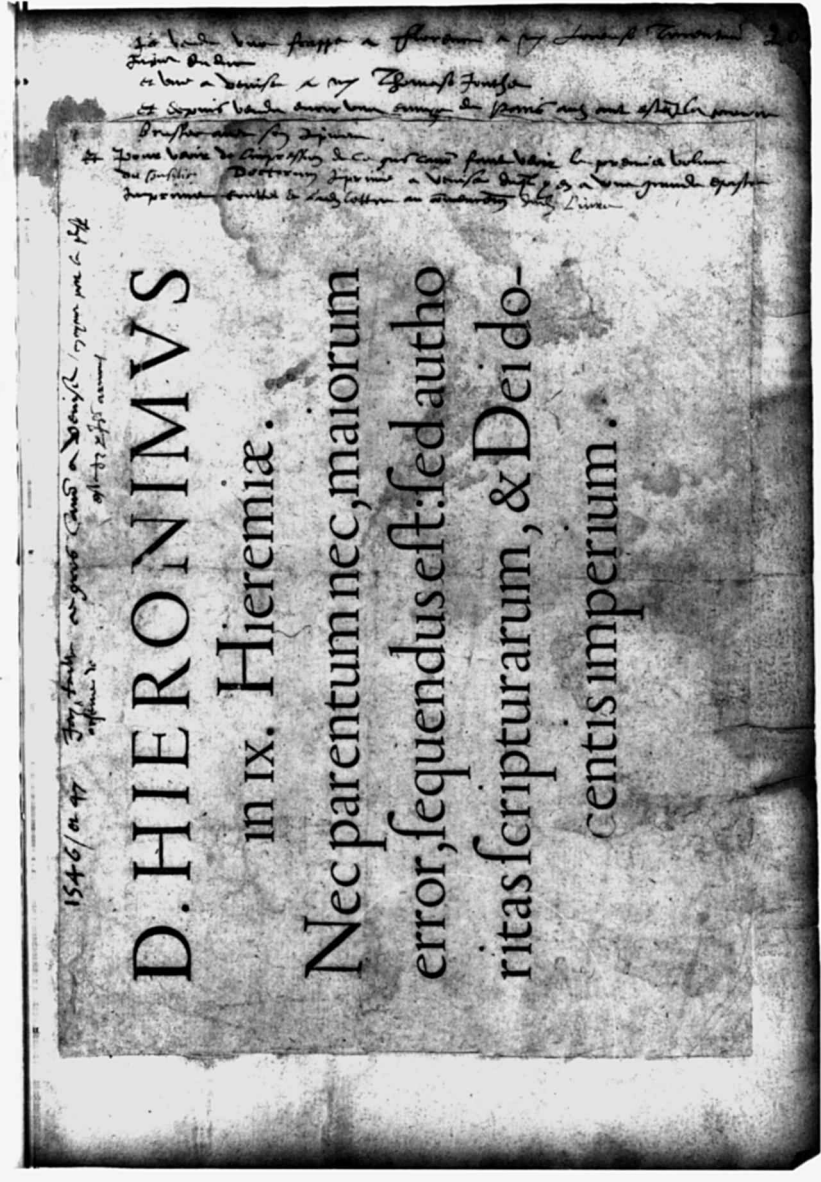
Illus. 4: Second state of the *gros canon* adapted for headings in Omphalius' *De elocutionis* (Paris: Simon de Colines, 1537). John M. Wing Foundation on the History of Printing, The Newberry Library, Chicago.



Illus. 5: Colines's *gros parangon* at the head of the title-page of Jean de Gaigny, *Brevissima & facillima in omnes diui Pauli epistolas scholia* (Paris: Simon de Colines, 1543). © Bibliothèque Sainte-Geneviève, Paris. Photo by Jean Loup Charmet.



Illus. 6: Augereau's *gros canon* at the head of the title-page of *In preciosissimos septem Davidicos psalmos* (Paris: Collegium Italarum, 1536). Bibliothèque Nationale de France.



Illus. 7: Annotated specimen of Le Bé's *gros canon* from Guillaume Le Bé, *Espreuves des lettres que j'ay taillées* [1545–1592]. Bibliothèque Nationale de France.

Sapienti malum videri
nullum videri potest, quod
vacet turpitudine: aut ita pa-
rum malum, vt id obruatur
sapientia, vixque appareat:
qui nihil opinione affingat,
assumatq; ad ægritudinem:
neque id putet esse rectum:
sed, quammaximè excru-
ciari luctuque confici, quo
prauius nihil esse potest.

Illus. 8: Specimen of Garamond's *gros canon* from Christopher Plantin, *Plantin's Index Characterum of 1567* (New York: Douglas McMurtrie, 1924). Special Collections Department, University of Iowa Libraries, Iowa City, Iowa.

and bottom of these characters also is echoed in the thin horizontal crossbars of such characters as A, E, F, and H. Extensive use of counterpunches also unified the counterforms in the font. Among the lowercase characters, groups including the b, d, p, and q; the h, m, n, and u; and the v and y were united by the use of the same counterpunch.²⁶

At the same time, the graphic tensions that mark the *gros canon* are many. The vertical stems of some of the lowercase letterforms, for instance, are not straight, but rather exhibit both paring and flaring. The lowercase l, for example, flares toward the top, while the x-height area of the stems in such letters as d, p, and q were lightened by paring. Other intriguing differences are found in variations in the modulation of strokes and the resulting patterns of stress within the characters. In general, the capitals are dominated by vertical stress and the lowercase by oblique stress, but there are many exceptions, enough to suggest that the disposition of stress was determined neither by a calligraphic nor a theoretical precedent, but rather on a case-by-case basis, as it is in the design of many modern fonts.

While some characters unique to or distinctive of the *gros canon* have been identified and discussed in the literature,²⁷ a few more that might be added to the list include the lowercase i with its exceptionally small dot gently tossed up to the right of the stem; the lowercase y with a ball serif at its foot, a harbinger of later design practice; and an ampersand (&) in a diminutive height that optically links it unambiguously with the lowercase, rather than with capital letterforms.

COLINES'S "GROS CANON" (1536)

Simon de Colines made intensive use of a *gros canon* similar to Robert Estienne's from 1536, incorporating it in title-pages and using it for other displayed material in formats ranging from the sextodecimo to big folios. Of 185 editions published in the decade 1536–46 currently includ-

26. Pierre Simon Fournier's *Manuel typographique*, translated as Harry Carter, ed., *Fournier on Typefoundry* (New York: Burt Franklin, 1973), includes a chapter on the techniques used in cutting large letters, pp. 40–4.

27. Perhaps the most idiosyncratic, and thus distinctive character is the capital M: it lacks a shoulder serif on the right side and in that regard it is similar to one of Aldus Manutius's text romans. The lowercase e also is routinely mentioned in discussions of the font: it is rolled slightly forward, Beatrice Warde suggested, "to give the eye the effect of a true horizontal." (Warde, "The 'Garamond' Types," 195.)

ed in an on-going study of Colines's work, more than half (94 editions) show uses of this *gros canon*.

Comparing enlargements of the two *gros canon* fonts reveals that while the justification differs (Estienne's *gros canon* is more loosely fitted), the vast majority of the characters in Colines's font are identical to those in Estienne's.²⁸ Of the characters that differ between these two *gros canon* fonts, some of the versions used by Colines probably were intended as improvements on the originals. A slightly ungainly lowercase *s* in Estienne's font, for example, was cropped at the bottom left to create a trimmer form in Colines's. The stem of the *y* and the bottom bowl of the lowercase *g* were extended to match other descending characters. And as M. Vervliet pointed out, Colines's lowercase *a* differed from Estienne's, possibly amended to link its design to that of an unusual form of that letter found in the original *æ* ligature. Another more sweeping change slightly decreased the heights of four ascending letterforms, the *d*, *f*, *h*, and long *s*, deliberately adding another dimension of variation to those found within the font's design.²⁹

Variant forms of three capitals also appear in Colines's work. An *L* with a longer horizontal stroke, sloping slightly downward, appears consistently in his work. The smallish capital *G* found in the 1530 font sometimes is replaced in Colines's with a larger letter whose shape and optical size is consistent with that of the capital *O*. By 1538 Colines's work also shows a variant *M* with serifs on both shoulders. The 1530 *gros canon* appears to have been absent a lowercase *j*, and Colines supplied it in 1536 as an innovatively jointed form. New accented characters appear in Colines's books, and the range of ligatures, or tied letterforms, also was expanded to include even rarely used characters like the double long *s + i*.

Given the identity of the majority of the characters between these

28. Modification of the *gros canon* began in 1536 with Colines's first uses of the font and continued through 1538. Among the books Colines published in this period, some probably served as proving grounds for the font. The first edition of Omphalius's *De elocutionis* (Paris: Simon de Colines, 1537; see P. Renouard, *Bibliographie*, p. 280 and Schreiber, *Simon de Colines*, no. 151), for example, contains dozens of freshly cast lines of the *gros canon*.

29. The decrease in the heights of these ascenders in the second state of the *gros canon* followed on the production of new ligatures that bound together ascending characters such as the *f* and long *s*. The decrease in height of the first consonant in the ligatured pairs is echoed in the shorter heights assigned to the individual letters, *d*, *f*, *h*, and long *s*.

two versions of the *gros canon*; given the potential for improvement to the originals contained in some of the variants found in Colines's version; and given the effort made from 1536 to round out the font, it undoubtedly makes sense to see these two versions as states of the original *gros canon*. The first state was used exclusively by Robert Estienne from 1530 through the end of his career as a printer and after that, by his heirs both in Paris and Geneva. The second state was used by Simon de Colines from 1536.

It is likely Colines who both cut and revised this *gros canon*, and who later made it available in its second state to other printers. Colines's skills as a punchcutter, as evidenced by the romans and italic he had cut for himself and for Robert Estienne in the years preceding the introduction of the *gros canon*, were sufficient to have produced a font of its subtlety and sophistication. Paring of stems and other nuances of its cutting echo the features of his text types. And revision of fonts was characteristic of Colines's method as a punchcutter: many of his text romans and italics were revised over time. It also is unlikely that anyone but the owner of the punches could have made the intensive use of the font Colines did in the last decade of his career.

Yet another factor that argues for Colines's authorship of the font is his introduction of a related *gros parangon* in his work in 1542. This twenty-two point display roman Colines used mostly in octavos. The font's capitals are those of a titling roman Colines had introduced in 1522. The importance of these sixteen-point capitals as the first titling font cut in Paris has long been understood, but its parallels with the later *gros canon* capitals are significant, as well, and include such things as the light weight of the font, economy of form in its construction, variation in stress within the suite of capitals, constraints on their widths,³⁰ and Colines's regular use of the titling capitals as initial letters. To these capitals Colines added a lowercase, which he continued to revise into the last years of his career.³¹ While Claude Garamond and others later cut display romans in this size, Colines's *gros parangon* is likely the earliest cut.

The late 1530s was a period of transition in Simon de Colines's affairs as a printer. He left the Golden Sun workshop on the rue St. Jean de

30. With the exception of the long-tailed Q, the 1522 titling capitals are confined to a series of five widths, the greatest of them broader than a square based on the height of the capitals, the narrowest broader than the half-square.

31. Colines proportionately altered the ascender, x-, and descender height ratio of the smaller *gros parangon* to 4 : 5 : 4.

Beauvais to the Chaudière family and reestablished himself in a shop on the rue St. Marcel. Colines sold some of his older woodcut initials and other things, and it is also at this time that the second state of the *gros canon* began to appear in the work of other Paris printers. The royal music printer, Pierre Attaignant, for example, adapted it for the title-pages of some of his books from 1537.³² Michel Vascosan began to use both Colines's older *criblé* initials and, from 1538, his *gros canon*. Denys Janot, who later was appointed royal printer in part on the basis of his ability to print "*en bon caractère*,"³³ also made the first of his many uses of the second state of the *gros canon* around this time. It can be found, in small quantities, on the title-pages of two books printed for Claude Garamond in 1545, during his brief excursion into publishing.³⁴ Étienne Groulleau and other printers used it, too. But this *gros canon* also had a durable appeal: it continued to grace the pages of Parisian books through the end of the sixteenth century and beyond.

AUGEREAU'S "GROS CANON" (1531)

The *gros canon* attributed to Antoine Augereau³⁵ is a fascinating counterpart to the original. Four uses of this font, three of them dating to 1531, have been identified in books produced in Paris with others of Augereau's romans.³⁶ A fifth, dating to 1536, is included with the illustra-

32. On Attaignant, see Daniel Heartz, *Pierre Attaignant, Royal Printer of Music* (Berkeley: Univ. of California Press, 1969).

33. Henri Omont, "Catalogue des éditions Françaises de Denys Janot, libraire parisien," *Mémoires de la Société de l'Histoire de Paris et de l'Ile-de-France*, Tome 18 (1891), 279.

34. Warde's "The 'Garamond' Types," 182, reproduces both title-pages. Annie Parent and Jeanne Veyrin-Forrier's "Claude Garamont: New Documents" (*The Library*, 5th ser., 29, no. 1 [1974]: 82-3) records another use of the second state of the *gros canon* in a book for which Claude Garamond supplied the type in 1545. There the substitution of a lowercase l for a capital I in the dedication suggests that Garamond had a limited supply of the type at his disposal.

35. On Augereau, see "Antoine Augereau, graveur de lettres, imprimeur et libraire parisien (†1534)" in Jeanne Veyrin-Forrier, *La lettre et le texte, trente années de recherches sur l'histoire du livre* (Paris: L'École Normale Supérieure, 1987), 3-50.

36. William Kemp, "Latomus...and the Aldine Romans in Paris, 1531-3." This *gros canon* is discussed neither by Warde, Vervliet, nor Veyrin-Forrier. Barker's "The Aldine Roman" reproduces an example as plate 7, but does not address the font itself.

tions. With so few examples identified, none of them directly linked to Augereau, and with no evidence for the completion and subsequent use of the font, the attribution of this second *gros canon* to Antoine Augereau must be considered provisional. Yet whether Augereau or another punchcutter produced it, it is clear that the 1531 *gros canon* approximates the effect of the original while employing little of its method.

The design plan for the font treated the *gros canon* more literally as an enlarged version of a text roman and incorporated fewer optical adjustments than had the original. The relation among ascender, x-, and descender heights, for example, is 4 : 5 : 4 and thus is identical to that of the largest text romans, by comparison with the 1 : 1 : 1 relation found in the original *gros canon*. Less weight was shorn from the bodies of these letterforms: a ratio of 1 : 8 is found as the width-to-height relation in the capitals and 1 : 12 in the full-height stems of the lowercase, by comparison with the 1 : 10 and 1 : 13 ratios respectively found in the 1530 *gros canon*.

The stress in Augereau's *gros canon* also is more consistently oblique, something that links it more directly to calligraphic practice and differentiates it from the idiosyncratic, character-by-character analysis of stress found in the original *gros canon*. While counterpunches likely were used in the cutting of Augereau's font, they also were not adapted as uniformly as they had been in the earlier *gros canon*. The trio of letters m, n, and u, for example, are united by the use of a single counterpunch, while the h shows a counterform of a different shape.

Comparison of enlargements of individual characters in fact reveals that no two characters available for comparison between the 1530 and 1531 *gros canon* fonts are alike. Whether it is differences of form or counterform, serif structure or the conformation of stems, any similarity of form that is apparent to the eye at reading distance quickly disappears to be replaced by variations rooted in different approaches to the punchcutting. Many of these differences are minute. The bottoms of the foot serifs in the original *gros canon*, for example, are cupped, whereas those in Augereau's version are straight. Augereau's lowercase a is narrower; the angle of the crossbar of his lowercase e is flatter; the dot of his lowercase i is lower; his lowercase o is larger and exhibits more oblique stress; his p has a heavier, more compressed top serif; his s has a weightier center stroke and different treatments of both top and bottom serifs; his t has a triangular top serif and a shorter crossbar, for example, than the characters found in the 1530 *gros canon*. Others of these differences oper-

ate on a larger scale: while the capital M's in the two fonts, for instance, are alike in declining a shoulder serif on the right, they differ in width, with Augereau's the wider form.

The careers of Antoine Augereau and Simon de Colines were connected. Augereau was following a path earlier taken by Colines as he made a transition from punchcutting into publishing in the early 1530s. In addition to several text romans of his own, he used a Greek font and some woodcut initials of Colines's in his work as a printer. And as Mme. Veyrin-Forrer has noted, in 1534, the two men were involved in a joint publishing venture. While Colines probably furnished the paper for the edition (it is a *Le Bé* paper not otherwise used by Augereau), the types used in their edition of Eusebius were Augereau's.³⁷ For these and other reasons, it has been tempting to imagine Antoine Augereau as earlier in Simon de Colines's employ, cutting type in his workshop before embarking on an independent career.

Assuming that it was Antoine Augereau who cut the second *gros canon* in 1531, however, then the host of differences between that font and the original is at issue. While clearly meant to simulate the appearance of the original *gros canon*, the cutting of the 1531 version reflects so little acquaintance with its methods as rather to suggest the total independence of these efforts. While masterfully cut, Augereau's *gros romain*, a large text roman, also is substantially different in character from Colines's and is more obviously reliant on calligraphic precedent and an Aldine model.³⁸ Such differences might perhaps be explained as representing a quest for difference on the part of Augereau. But the many variations in punchcutting technique alone probably are enough to suggest two separate streams of craft and typographical practice, Augereau's dedicated in the early 1530s to the recapitulation of an Italian aesthetic, Colines's to a synthesis of Italian ideas, emerging theory, and the advancement of discoveries independently made in the process of cutting punches.

37. Veyrin-Forrer, "Antoine Augereau," no. 39, and Philippe Renouard, *Bibliographie*, 229.

38. Predictability in the oblique stress and regularity in the alternation of thick and thin in Augereau's romans links them to earlier calligraphic practice, while the serif formation found in his fonts bears many parallels to the romans of Francesco Griffo, Aldus Manutius's punchcutter.

LE BÉ'S "GROS CANON" (1547)

If Antoine Augereau's *gros canon* is as different in its particulars from Simon de Colines's as it might be, it finds its polar opposite in the *gros canon* cut by Guillaume Le Bé in 1546–7.³⁹ Born in 1525, Le Bé was a member of the Troyes papermaking family. Brought to Paris, he was apprenticed to Robert Estienne, in whose workshop he began to fashion punches, justify matrices, and cast type. His apprenticeship completed, in 1545 Le Bé left Paris for Italy, where he spent several years cutting Hebrews and Greeks in Venice and then some months in Rome with the printer, Antonio Blado. One of the commissions Le Bé undertook in Italy was the cutting of a *gros canon* like those of Estienne and Colines for Lorenzo Torrentino, ducal printer to Cosimo de' Medici at Florence. The font was used by Torrentino from the late 1540s⁴⁰ and Le Bé also supplied strikes from the punches to another printer in Venice, reversing the direction of the south-to-north flow of innovation and influence in the design of type.

Le Bé's *gros canon* is a very close copy of the original, reflecting intimate acquaintance with features of the font likely developed in the process of its casting. The relation of ascender, x-, and descender heights, for example, is identical to that of the original *gros canon*, and at 1 : 1 : 1, partakes of its striking aesthetic effect. Like Antoine Augereau, Guillaume Le Bé increased the weight of the font. By comparison with the 1 : 10 and 1 : 13 ratios of the original, Le Bé's capitals show a ratio of 1 : 8 in the width-to-height relation of their stems (as had Augereau's), and the lowercase stems are 1 : 11, nudging up the color of the font beyond Augereau's and leaving it a bit blacker and more assertive on the page. Other aspects of the cutting of the font mimic those of the original. Both the slight flaring of lowercase stems and their paring in the x-height of bowled characters closely resemble the original. The use of counterpunches unites the interior white spaces in whole groups of letterforms in much the same way it had in the original. While the stress in this ensemble of letterforms doesn't vary as dramatically as it had in the original, it is given considerable play in the design.

39. On Le Bé, see E. B. Howe, "The Le Bé Family," *Signature* 8 (1938): 1–27.

40. Daniel Berkeley Updike's *Printing Types, Their History, Forms, and Use* (New York: Dover Publications, 1980) includes a showing of Le Bé's *gros canon* in one of Torrentino's books and some discussion of its use in that context (vol. 1, illustration no. 102, with discussion *en face* on p. 161).

Most of the capitals are similar in form to those in the 1530 *gros canon*, with variations found mostly in the treatment of serifs. The capitals H and R, for example, have more extended serifs than the demure ones found in the original *gros canon*. The treatment of the serifs that begin and end the capital S also is heavier and more assertive in Le Bé's version than in the original. Among the lowercase letterforms, there is in general remarkable similarity of form throughout the suite of letters when they are compared with their counterparts in the 1530 font. Le Bé's lowercase a and c, however, are both slightly narrower forms, and his lowercase e, while virtually identical with the 1530 version in its exterior form, shows a more strongly canted crossbar and an idiosyncratic counterform in the "eye" of the e, a difference noted by several historians.⁴¹ The remaining differences that distinguish the lowercase of Le Bé's font from the 1530 *gros canon* are minor and none of them are programmatic. They include such things as slight variations between the treatment of the serifs in such characters as the lowercase d and the ampersand; arches in m and n that break from the stem a bit higher than those of the original; and the slightly taller stem found in Le Bé's lowercase r.

While more posed than it is poised (and its slightly heavier weight aside), Guillaume Le Bé's *gros canon* is a well-informed version, almost a facsimile, of the original *gros canon*. Cut in the months directly following the death of Simon de Colines, the font was used only in Italy. Le Bé brought the punches with him on his return to Troyes and then Paris in 1551, but he chose not to cast his version of the *gros canon* there, probably as a gesture of respect for the priority of the first and second states of the original *gros canon*, which remained in use in Paris by the heirs and successors of Robert Estienne and Simon de Colines.

GARAMOND'S "GROS CANON" (1555)

While long credited with the cutting of the original *gros canon* in 1530, it is likely that Claude Garamond cut his own only much later, a full quarter-century after Robert Estienne's was first used. Both H. D. L. Vervliet's reading of the chronology of Garamond's career and a fuller understanding of the affairs of Simon de Colines and Robert Estienne suggest that Garamond's contribution to this genre crowned his career as a punchcutter, rather than launching it.

41. See, for example, Vervliet, "*Les Canons de Garamont*," 492.

Vervliet dated the first use of Garamond's *gros canon* to a book published in Paris by Andreas Wechel in 1555.⁴² But the better-known presentations of the font emanate from Antwerp, where Christopher Plantin sheltered many of his punches and matrices after Garamond's death in 1561. Plantin's 1567 *Index Characterum*, a specimen of his fonts, was reprinted in facsimile by Douglas McMurtrie in 1924.⁴³ The British scholar Harry Carter later found in the archives of the Plantin-Moretus Museum another specimen of c. 1579 showing Garamond's *gros canon* and other fonts.⁴⁴ The labels used in what Carter called Plantin's "Folio Specimen" made it possible to link the fonts displayed in the specimen with Claude Garamond and other punchcutters identified in Plantin's inventories.

Long considered a masterpiece of typecutting, Garamond's *gros canon* is true to many of the features of the original at the same time it finds its own path toward ideal presentation of a display roman. Garamond's *gros canon* is perhaps fairly described as a variant within the genre. Its graphic qualities and effect are of a different order from the original: it often is characterized as "classic," "dignified," or "restrained." As a model for later display romans, it was to be more influential than the original, the result in part of the maturation of some of the ideas contained within Colines's experimental font.

Claude Garamond followed Colines in establishing a 1 : 1 : 1 relation among ascender, x-, and descender heights. Unlike Augereau and Le Bé, he also followed Colines in the light weight of his lowercase: the full-height stems show a ratio of 1 : 13. Garamond's capitals, however, are heavier than Colines's and show a 1 : 9 ratio, rather than Geofroy Tory's recommended 1 : 10. A significant difference between Garamond's and the 1530 *gros canon* is found in the more consistently oblique stress it contains. Variation in stress is one of the keys to the liveliness of the original, while consistency in the disposition of weight within the series of letterforms was emphasized by Garamond. His font nevertheless contains many hints of the vertical stress found in the original. Crossbars in the capitals, for example, are kept thin, as they were in the original, and the location of thin strokes in such bowled or serpentine

42. *Ibid.*, 488.

43. Christopher Plantin, *Plantin's Index Characterum of 1567* (New York: Douglas McMurtrie, 1924).

44. Carter, "The Types of Christopher Plantin."

letters as B, C, R, and S follows a pattern established in 1530. Like Colines, Garamond made thoroughgoing use of counterpunches in the cutting of his font: among the lowercase letterforms, groups including the b, d, p, and q; the h, m, n, and u; and the v and y all display consistent counterforms based on their use.

Character-by-character comparison of enlargements of the Garamond and Colines fonts points up a multitude of differences between them. In addition to the difference in weight found in the capitals, for example, there also are many differences in the shapes of individual letterforms. Garamond's capital A, for example, is slightly narrower than Colines's and its point is more steeply angled; Garamond's capital M has a deeper v-form at its center and serifs on both shoulders; Garamond's capital N has a deeper v-form on the right; the end-stroke of the tail of Garamond's capital R is upturned by comparison with Colines's; the bottom serif on his capital S is more assertive; and the form of Garamond's capital V is, like the A, slightly narrower than Colines's. In addition, the crossbars of such capitals as E and H were lowered in Garamond's *gros canon*, giving these letterforms a lower center of gravity within the ensemble.

Roughly half of Garamond's lowercase letters are similar in form to their counterparts in the 1530 *gros canon*, while the others show a plethora of differences and amendments. While identical in shape and structure to Colines's, Garamond's lowercase a, for example, carries notably different serifs, both at the top and bottom of the letterform; the crossbar of Garamond's e employs a flatter angle than did the original, which rolled slightly forward; the cap of Garamond's lowercase f and those in his f-ligatures curl down, by comparison with Colines's; Garamond's lowercase g is wider; his lowercase j is lighter, less obviously jointed, and its dot is placed a bit higher above the stem; Garamond's lowercase n is wider, as are the bowls of his p and q; Garamond's lowercase v is shallower than Colines's and has wider side serifs; and while the structure of Garamond's lowercase y is similar to Colines's innovative form, the angles of their v-forms differ, as do the lengths of their angled stems.

The nuances of Garamond's punchcutting also strongly contrast with those of Colines. There is, for example, no paring or flaring of stems found in Garamond's *gros canon*, eliminating one arena for graphic tension within its design. And Garamond's preference for compact, triangular top serifs, expressed in eleven of the twenty-six lowercase

characters, supplies yet more uniformity within his font. In fact the quality of Claude Garamond's punchcutting, as it reveals itself in the *gros canon*, is much more like Antoine Augereau's than it is like Simon de Colines's, something that supports the Le Bé memorandum's assertion that Garamond apprenticed with Augereau.⁴⁵

Claude Garamond's 1555 *gros canon* was almost certainly his first. Neither the overarching graphic qualities of the font nor the character of its punchcutting suggests that Garamond had earlier had a hand in the design or cutting of the original. Garamond did make astute observations and a set of critical judgments about the original *gros canon*. That, in turn, gave shape to a font that advances some of the features of the original while replacing others to create a more uniform and serene *gros canon*.

* * *

The graphic innovation contained in the *gros canon* may have sprung from as practical a thing as the need of a young printer for initial letters cast in lead, rather than cut from wood. Simplifying print production by eliminating wood was an important economy, ever more so in the subsequent development of typography. It was Robert Estienne's good fortune that this problem lay within the métiers of two experts on letterform he knew well. Simon de Colines's expertise in punchcutting and Geofroy Tory's keen intelligence for the construction of capitals likely were pooled with Estienne's judgment and sensibility in the creation of their *gros canon*.

Notable for its beauty and integrity, the *gros canon* emerged toward the end of an experimental period in the history of printing, one that explored many avenues for fonts. Initially cut in imitation of a variety of scribal letterforms, over time, consensus favored the roman. In Paris, the cutting of roman fonts began only a few years before the introduction of the *gros canon*, but it was a problem pursued with astonishing vigor. Not only were romans in the traditional range of text sizes cut, but the smallest romans used in typographic communication also were then cut for the first time. In one sense, the appearance of the *gros canon* capped this flurry of activity by sounding a note at the upper end of the typogra-

45. Carter, *Sixteenth-Century Typefounders: The Le Bé Memorandum*, 30. The preference of both Augereau and Garamond for compact, triangular serifs atop stems is one of several parallels in their punchcutting technique.

pher's scale. It brought a new dignity and authority to the printed book, qualities that embodied the values of humanism, articulated within the printer's art.

The quick cultural assent to the features of the *gros canon* contributed to the formation of an international idiom for typographic communication, one used from Italy to England and later in the New World, as well. That idiom transcended earlier differences in style and was universal in the sense that it could be applied to virtually all textual genres, from Bibles to science. Devised at an historical moment when the vernacular languages had begun to replace an internationalizing Latin, it persists as a sign of the bond that connects a group of kindred cultures.