

# The Anatomy of the Alphabet

By WILL RANSOM

The alphabet considered in these notes is the familiar group of twenty-six phonetic characters now in common use, particularly in the form of type for printing. It is only one of many current alphabets, one of many more that have flourished and died out in the past, and one among many other systems of communication. It is called the Roman alphabet because the present letter forms are derived from the style of Italian formal writing current about 1500, when the change from written to printed communication was just beginning. The word "alphabet," however, is from the Greek, being a short form of the first letters in that system. The term was first used as *alphabetum* in Latin by Tertullian and St. Jerome in the early years of the Christian era. In these exchanges of words among racial and geographical divisions, it is interesting to note a similarity between the Greek names for letters—alpha, beta, gamma, delta—and the Hebrew aleph, beth, gimel, dalet.

The letters of this alphabet, like people, have anatomical elements—bones, joints, flesh, and surface variations. Each letter has its own shape and individuality, with more marked differences in structure and appearance than may be found among the same number of human beings. Before examining these variations and their causes, a brief survey of origins and evolution in methods of graphic communication will provide an informative background. For practical purposes, of course, any established series of symbols could represent any commonly understood meanings, but we start with the characters we have now and go back to see how they reached their present forms and how those forms are put together, bearing in mind that printing is only another way of writing.

For a beginning, we can only imagine a prehistoric man making a mark with the intention that it should mean something to him and to his associates. Since then, jumping from point to point through centuries and millennia and eras, we can identify a few of the more effective influences on letter forms.

The first formal system consisted of pictographs — drawings of objects — which

served to record a few simple facts of experience. One phase of this method continued in use until recently in the skin paintings of American Indians, and its perpetual usefulness is suggested by the saying that "one picture is worth a thousand words."

The next step, a phase of intellectual development, brought about ideographs, in which, by association of ideas, abstract meanings were added to concrete facts. Both of these systems were limited in scope and cumbersome to use because a different character was required for every word. In the simplest usage, a picture of a house might reasonably be expanded to represent the concept of shelter, but any more subtle implications could be understood only by the person who invented them and by those whom he instructed. Small wonder that there were few learned men in those days.

Written communication became flexible and easy only when symbols became phonetic, first representing syllables and later single sounds instead of entire words. We accept that flexibility as a matter of course, since we have never known any other method, but it was a revolutionary—properly, evolutionary—idea when it was first adopted. There is no certain knowledge of when and where that occurred, but it is possible to trace some of the changes that have appeared in graphic symbols and to identify the causes of those variations. In this field of scholarship are unlimited opportunities for research, interpretation, even imagination. The use of symbols for communication is, of course, closely associated with degrees of civilization, social organization, geographical location, racial characteristics, and national traits. Several Ph.D. dissertations could be devoted to the relationship between handwriting and the cultural levels of various times and places.

The structure and form of a letter are determined by two factors: the implement used and the hand movements that guide it. Manual habits have remained fairly constant in all times and they are still the deciding force, accepting the inherent limitations of a tool or controlling its flexibility.

One of the earliest writing instruments

was a triangular punch which made cuneiform characters in clay tablets. Later, but early among the sequence of tools that have affected the development of written letters, was the stylus, used on wax tablets by the Greeks and Romans. Its only function was to scratch lines with but two qualities, length and direction. There is the skeleton of a letter in its utmost simplicity. The same result is now produced by a ball-point pen. Other instruments are brushes, soft and flexible; chisels, for incising stone with crisp severity; and the engraver's burin, for cutting sharp, thin lines in metal.

All of these have contributed something, directly or indirectly, to our present alphabet, but the pen, particularly when shaped with a broad chisel edge from reed or cane quill, is the principal effective instrument and the only one to be considered at this time. Later in these notes we shall discover how a pointed pen permits complete freedom in drawing letters rather than writing them.

Now, before we consider writing or drawing letters, or reproducing them in type, is the moment to examine the anatomy of letter forms—the bones, joints, flesh, and surface variations.



First is the skeleton. For example, the essential form of a capital "A" is composed of three lines (bones) and three joints (1). Wherever this arrangement appears its meaning is unmistakable and, even if it never varied, it would serve its purpose, which is to represent a sound.

But the natural world and human restlessness are not content with simple forms, so bodies have flesh in varying amounts and letters may be made of thick or thin lines, or of contrasting weights in combination (2).

Then there are surface variables, short strokes (serifs) across the ends of structural lines (3), and brackets (4), which conceal abrupt angles beneath smooth contours. Both of these elements are small and ap-

parently subordinate, but they are comparable to hands and feet, eyes and ears; they are the little things that add up to beauty—or to something else. These figures show the modern forms, as they have been derived and refined from written sources, the more important of which are shown in another group of specimens.

Given a broad pen, with its characteristic thick and thin strokes, the letter form it produces is determined by how it is held and by how the hand moves it. And the human hand, with all its flexibility and control, has stubborn preferences about how it shall move. Normally, the pen is held at an angle, but is turned or twisted as choice or convenience requires. One manual habit is to make little sideways flicks at the beginning and end of a stroke. These are the origins of serifs. The sequence and directions in which strokes are made also affects the shape of a letter and a broad pen does not readily move up—only sideways and down. A little carelessness or haste may produce a rather wild scrawl.

The broad pen has been in use for some thousand years, give or take a century or two. It was practically the only tool that was producing manuscript books in the fifteenth century. For at least four hundred years previously writing had been continuously changing, with as many styles as there were writers, just as penmanship always varies with the individual, but four major styles are distinguishable. In rough chronological sequence, they are:

ad maiorem dei

5

gloriam

6

tempora

7

amicus

8

1. The tight, angular gothic, basically a succession of straight lines, shown here in its simplest form (5) with rudimentary serifs. This was in general use and had reached a high level of development in the fifteenth century. One practical reason for the closely-fitted letters was the necessity

for conserving space, because paper, vellum, and parchment were limited in supply. Haste and carelessness also operated and angles became curves, particularly in the last stroke of a letter (5, final "m"). This tendency is apparent in our everyday writing, in which the last letters of a word often run off into squiggles instead of definite strokes.

2. That tendency towards curves instead of angles continued through many intermediate variants to the point where the style became round gothic, much simpler than the earlier form and easier to write—also easier to read. It reached an extreme (6) in which the hand and arm are rolling. Here is freedom at its most, and the result has some pleasant features, but a whole page in this manner would be as tiresome to read as the earlier tight version. Note that both of these specimens (5-6) are written with the same pen, at approximately the same angle.

3. While the gothic manner was passing through these mutations, principally in Germany, Italian calligraphers were writing with a narrower pen and making letters wider and more open (7). There was more daylight inside the letter, which makes for greater legibility. One way of explaining this is to say that what we read is not the black letter but the white paper around it.

4. Finally, the hand again claimed its prerogative of free motion and tipped letters off the vertical axis (8). This style developed as various forms of chancery hands, came to be called italic in type, and eventually found a loose, flowing character in the penmanship of our time.

When type and printing were invented in Germany about the middle of the fifteenth century, they took over the function of formal writing, at least for books. From that moment, when letter forms became crystallized in type, the variations implicit in handwriting gradually disap-

peared and the anatomy of the alphabet settled into permanent relationships.

Naturally, the first printing imitated as closely as possible the contemporary manuscript pages. This is clearly evident in the similarity between a page of the Gutenberg Bible, printed at Mainz about 1450, and German manuscripts of the same period. What is believed to be Gutenberg's second type, as used in the *Catholicon* of 1460, is smaller and definitely in the round gothic manner, indicating a tendency towards more open letters even so early in the course of development.

When Jenson began printing at Venice in 1470, he followed the same method and modeled his types on the humanistic manuscripts current in his time and place. Thus, printing started with two distinct styles of letters—the stiff, tight gothic black-letter and the rounder, more open alphabet which has come to be called Roman. Those two styles have been in competition ever since the beginning, but the latter has won out in popularity because it is easier to read.

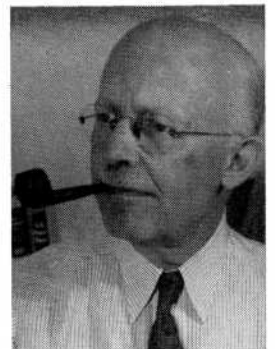
The spread of literacy following the advent of printing stimulated written communication and called for simple styles suitable for rapid writing. For that purpose, pens for everyday use were trimmed to smaller points, easier for untrained hands to control, and steel pens eventually replaced the handcut quills. And those pointed pens were destined to become the principal tool of modern type design.

In making type, the first step is to engrave a letter on a piece of steel, called a punch. This is driven into a matrix of brass or copper, which serves as a mold in which type is cast. During the first four hundred years of typefounding, each letter had to be engraved in this way in the size it was to print. Imagine the difficulty of engraving this letter "g" by hand in metal!

The two methods of making letters—carving in metal and drawing with a pointed pen—are about as far apart as any

#### ABOUT THE AUTHOR

*Will Ransom, a typographer and book designer of national reputation, became Art Editor of the University of Oklahoma Press in July 1941. The Press was indeed fortunate to gain his services, for during each of five years, from 1945 to 1949, books designed by him were listed by the American Institute of Graphic Arts among The Fifty Best Books. Mr. Ransom is the author of Private Presses and Their Books. In 1954, he received a citation from the Limited Editions Club for "distinguished service to the club and to the world of books during the first quarter-century of the club's history, 1929 to 1954." The Quarterly is glad to offer its readers this article by a recognized authority.*



two processes can be, but they come together in a marriage of convenience and practical performance. Some seventy-five years ago Lynn Boyd Benton invented a machine for engraving steel punches mechanically from large patterns. Immediately, the tiniest details came under control in workable size, since type patterns are usually about twelve inches high. Now an exact ratio of line thickness can be measured and controlled, and minute variations in serifs and brackets are easily drawn.

The key word is "drawn." Now, instead of accepting the structural domination of a broad pen, we use a pointed pen to draw the outline of a letter, giving it whatever skeleton and flesh and physiognomy we choose—or have learned by experience is permissible. In the words of Frederic W. Goudy, the most prolific and imaginative type designer of our time, we "think of a letter and draw a line around it."

A type designer, or anyone who draws letters, considers all these structural and surface elements and combines them in a purposeful letter — light and graceful, sturdy and dependable, or bold and emphatic. He is concerned not only with a basic form of skeleton and flesh, but even more with the delicate variations in minor details which notably affect the character of individual letters and the appearance of a printed page. But he must also bear in mind, with utmost respect, the relationship of one letter to its twenty-five associates. Drawing a single letter is a fascinating exercise in taste and ingenuity, but construction of an entire alphabet is a dedicated essay in judgment and discrimination. His manner of thinking was neatly expressed by Max Beerbohm when he said of Rostand's literary style: "His lines are loaded and encrusted with elaborate phrases and curious conceits, which are most fascinating to anyone who, like myself, cares for such things."

But a reader need not care for such things. It is enough for his reading comfort that, as long as the letters and words on a page are easily recognizable—and that is true of most books today—it makes no difference where or how the letters originated, how they have been refined or distorted, or who spent an entire afternoon — as has been done—deciding whether one point of a letter should be moved one quarter-thousandth of an inch.

## Books

*Michele Barbi's Life of Dante.* Translated and Edited by Paul G. Ruggiers. University of California Press (Berkeley and Los Angeles), 1954. Pp. x + 132.

In preparing a translation of Michele Barbi's life of Dante, Professor Ruggiers has brought within the reach of the student and the general reader without proficiency in the Italian language the most recent authoritative introduction to the study of Italy's greatest poet. By the time of Barbi's death, in 1941, at least two generations of Dante scholars had come to look upon him as their master. His life-long and strikingly successful work as a textual critic in classifying and editing the manuscripts of the *Vita Nuova*, the *Canzoniere*, and the *Commedia*, and his interpretative and critical powers in elucidating minute points of literary history led almost inevitably to his authorship of the article on Dante which appeared in 1931 in the *Enciclopedia Italiana*. This definitive treatment, in which Barbi distilled to a quintessence the fruit of his erudition and the substance of scores of essays and studies, was reproduced somewhat later, with slight revisions, as a book, *Dante: Vita, Opere e Fortuna* (Florence, 1933). From it the English translation has been made.

*Barbi's Life of Dante* is arranged in four parts: "The Life of Dante Alighieri," "The Minor Works," "The Divine Comedy," and "The Reputation and Study of Dante." To these Dr. Ruggiers has added a preface, explanatory notes wherever they are needed to clarify the text, and a bibliography, mainly of English works that lead the general reader toward a deeper understanding of the poet and his art. The historical matters which Barbi recounts are the established facts of Dante's life: his Florentine origins, early studies and youthful experiments in art, and domestic life; his entanglement in the faction and the political turmoil that all but destroyed Florence, and long years of exile, filled with the vicissitudes of hope and despair; and, most importantly, the historical relations in which his masterworks were conceived and produced. The *Life* is a model of historiography. Recognizing better than many that there are problems of Dantean scholarship that offer at best only hypothetical solutions, Barbi prudently eschews myth, legend, and conjecture—pedantic or romantic.

The reader's interest in Dante centers, of course, in the *Commedia*. And Barbi's treatment of the conception and genesis of the poem in the light of its author's exile is especially important. In accordance with the traditional view, the *Commedia* is Dante's fulfillment of a resolution and a promise, made at the end of the *Vita Nuova*, to write no more of Beatrice until he could treat of her more worthily. To Barbi, the *Vita Nuova* appears to have been no more than a composition determined by the conventions of current amatory poetry, historically important in estab-

lishing the characteristics of the 'new style' in both the conception of love and the conception of art. The scope and range of the *Commedia* are patently higher and wider. Whatever Dante's first plan of the epic might have been, his purposes, Barbi infers, were radically altered by his enforced wandering through Italy as a scorned and an indigent outcast. On every side, in both the spiritual and the secular members of the political body, he could view the triumph of greed, envy, and violence. The perversion of the Papacy and the Empire, the two divinely ordained guides of humanity, were, he thought, responsible for the disaster. Judging that his only authority to speak and to be heard lay in his genius as a poet, he conceived of the *Commedia* as a vision in which the immensity of evil could be vividly and impressively portrayed, in which the meaning would arise from the history of mankind in its own eventful development, and in which the divine intention to intervene in the restoration of eternal law and the re-establishment of the world upon its true course might be announced. His *Commedia*, he hoped, would instruct the Empire in its proper care of earthly goods, and the Papacy in the care of spiritual goods. That justice in the right distribution and ministering of these goods is the only way of human salvation was, as Barbi would have it, the deep conviction present in all the works of Dante. And Barbi's conclusion must weigh heavily in any interpretation of the poem.

In *Michele Barbi's Life of Dante* Dr. Ruggiers has produced an able translation: the language moves fluently, and the diction is clear, precise, and appropriately dignified. In this handsome volume, with the medieval feeling of its binding, the frontispiece with de Michelino's portrait of Dante, the select type, and the fine paper, the University of California Press has issued a book worthy of both the writer and the subject.—Philip J. Nolan

Dr. Paul Ruggiers, Associate Professor of English, who joined the staff of the Department in 1946, spent several weeks of the summer, 1951, in the Library of the Institute of Medieval Studies, University of Toronto, where he made the first draft of a translation of the CONSOLATIONS OF PHILOSOPHY of Boethius. During the academic year 1953-54 he was on leave of absence, having received a Faculty Fellowship from the Ford Foundation for the Advancement of Education; completed his translation of THE LIFE OF DANTE, which is receiving very favorable comments from Italian scholars in this country and abroad.

Dr. Philip Nolan, who has written this review, joined the faculty in 1953 as Assistant Professor of Classical Languages and Literatures and of English.