

Letterletter 15: On Copperplate

Much has been written on the chemical aspects of etching. There is almost no literature on the technique of engraving because there is little to say. These are the essential stages: Grind a graver, hone its face and its backs to polish and cut the lines you want as grooves in a polished copper plate. Keep the graver so sharp and the grooves so shallow that the graver cuts without much pressure. A precise description would take a long treatise that cannot be as instructive as watching an experienced engraver. Still better have an experienced engraver watch your attempts.

Swelling strokes come from increasing the angle between

the graver and the surface of the plate but this effect is not very spectacular. The swell is not sufficient to render a pen stroke of normal size with one stroke of the graver. Only very small writing could be rendered in this way. The strokes in the engraved writing books have been cut as filled outlines.

A translated paragraph from *Gravure en lettres*, in the *Encyclopédie*:

‘This method of building up the letter in repeated strokes is not common among the majority of engravers who are unfortunately urged to work in a hurry because the purpose of the work is the profit of their employer rather than perfection and the honour of the craftsman, but we believe that we should prefer the described method as applied by the famous Bailleul whose memory will remain precious to the apprentices he left behind.’

Autumn 1996

Patterns of strokes

Simon de Vries or Frysius (the Frisian) was an excellent engraver of writing examples because he was an excellent calligrapher as well: he understood what he saw. His masterpiece are the plates for *De spiegel der schrijfkunst*, 1605, by Jan van den Velde. The book opens with the text of James 1:17 ascribing any perfectness to God. The authors leave to the reader to conclude from this motto that the divine perfection descended upon their hands. The photographic reproduction shows a detail of this print. The letters are deep solid black. I got the embroidered effect by illuminating the print with skimming light. What you see is the last layer of strokes with which Frysius filled the outlines.

I show a schematic picture of this pattern as well. The strokes are running from the thin end. I have exaggerated their swelling. I assume a underlying pattern of translated (parallel) strokes (of threading, as engravers say) that is crossed by the reproduced pencil.

Amy Worthen and I might make you believe that we can identify the engravers by the pattern of their strokes. In fact we cannot. We just distinguish two basic patterns, *pencil* and *translation*. A pencil is a set of lines in the same plane meet-

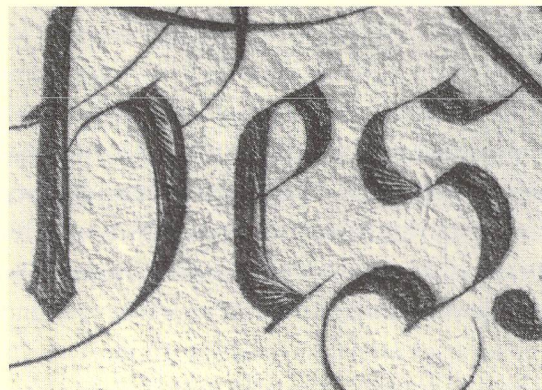


Frysius

ing in the same point. In translation the points of a line are shifted along the same distance in the same direction. A pencil is characteristic for Van den Velde and translation is characteristic for Boissens. I assume that Van den Velde started with translation and Boissens with pencils; both applied the same patterns but in a different order. In his careless manner Gerard Gauw did not maintain an order in his applica-



Boissens

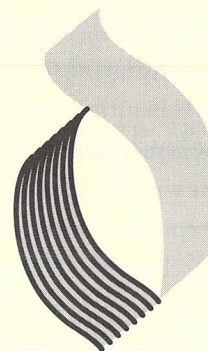


Gauw

tion of the patterns. He laid them out in a hurry, trying to fill the gaps with the other pattern, but again too wide. Moreover he did not understand the penstrokes he was supposed to follow. This is the real characteristic of this engraver. However, rather than identifying engravers our ambition is a reliable description of engraving. G. N.



pencil



translation

An art of crafts

The sound of Mannerism is mannerist music. Because Mannerism is not complete without its the music I threaded the names of great musicians in my garland of mannerist genius in *Letterletter 14*. The music of Mannerism, persistently labelled as Renaissance music in musicology, cannot be understood apart from Mannerism. It cannot be fully understood either apart from its favourite instrument, the lute. The instrumental connection with craftsmanship is typical for Mannerism. To appreciate mannerist print making we have to understand the fundamental difference between etching and engraving. The mannerist artist had the easy technique of etching at his disposal, but he preferred time consuming engraving for the same characteristics that makes the romantic artist reject engraving.

In these remarkable connections Mannerism appears as an attitude with a special attention for the instrumentation of its conceptions. Its dreams and great ideas depend on its tools and techniques: 'a kingdom for a horse'. Our romantic historians do not care much for craftsmanship and least of all for engraving. Their neglect of technique belongs to their own self-portrait. In a faithful portrait of Mannerism tech-

nique cannot be neglected. The history of Mannerism must be rooted in craftsmanship. The same can be said of calligraphy. In the romantic appreciation artistic writing only has a position as far as it can be considered as the graph of an individual artist, preferably illegible. In Mannerism writing is the ultimate art, the pure concept of a new well ordered universe, sheer form as the champion against chaos. Hence the historian of Mannerism must study handwriting first.

In his manual, *Eine gute Ordnung*, from 1538 Johann Neudorffer describes the construction of the Burgundian bastarda and *Letterletter 13* explains Neudorffer's analysis to contemporary designers.

In *Early Italian writing Books*, Verona, London, 1990, Stanley Morison writes about the physical aspects of the German manual:

'In the struggle for the calligraphical fittest it was the intaglio technique, first used in Germany for the elder Neudörffer's *Gute Ordnung und Kurtze[r] Unterricht* that triumphed. The Nuremberg master, it is relevant to notice [why?], included two plates of Roman capitals and one of classical Roman Chancery, used for Latin texts in a sort of supplement to the body of the work, which was devoted to

German Chancery scripts, with German texts, that originated in the court of the emperor Maximilian. They represent a nauseous hybrid of gothic and baroque. The script is remarkable for the puerile degree to which embellishment is preferred to legibility; copperplate was a godsend to these artists even if at first it involved, apparently, highly complicated cutting and printing problems. Apparently Neudörffer's engraver could not master cutting in reverse, which is necessary for printing, and so the examples were transfer-printed on to another place [plate] for recutting in reverse.' (Stanley Morison)

Now read on and try to keep in mind that it is about the same book:

'The first writing book printed by means of intaglio plates was made by Johann Neudörffer of Nuremberg. In 1538 he published *Eine gute Ordnung*, which was etched and printed in counterproof. Neudörffer found that it was infinitely easier to write in the accustomed direction on the plate. The advantage of etching was that it was far closer to his actual pen line than a woodcut could be. But perhaps due to the unreliability of etching grounds and the poor line quality, Neudörffer's experiments with intaglio were abandoned for the time being. Later in the 16th century when writing masters

again turned to intaglio for the reproduction of their scripts, it was to engraved, not etched lettering.' (Amy Worthen)

To appreciate this tribute to mastership to its full extent one should try how 'easy' it really is to write on a slippery plate. To appreciate the clarity of this description one only needs to compare it with the passage by Stanley Morison.

Morison has not understood his sources about Neudörffer: The plates were not engraved at all, but etched. And they were neither recut in other plates: From each intaglio print 'offset prints' were made until the master print was exhausted. This method was not only more faithful to the original handwriting than any other reproduction technique, it was practical as well, because a considerable number of offset prints could be made in the same time as one intaglio print. For the purposes of teaching this was the most efficient method for reproducing the master's example that the technique of the time allowed. Later calligraphers abandoned this technique that demanded complete control of writing. What was excellent for demonstrating straightforward handwriting did not meet the demands of the splendid design the later mannerists were after. In this interpretation I differ from Amy Worthen, but not from her description.

A few years ago Ton Croiset van Uchelen, keeper of manuscripts of the Amsterdam University Library introduced me to the American scholar Amy Worthen. She was investigating calligraphy in Dutch mannerist prints and she had shown interest in my method for analysing engravings. Her study was published as: *Calligraphic Inscriptions on Dutch Mannerist Prints*. In *Nederlands kunsthistorisch jaarboek 1991 – 1992*, vol. 42 – 43: *Goltzius studies: Hendrik Goltzius (1558 – 1617)*.

Amy Namowitz Worthen is a special investigator of print making because she is an accomplished engraver herself. For me it is also exciting to read a careful study on a subject that I have only touched loosely. Moreover this study is in the opposite direction. I talk about writing and how it is engraved whereas Amy writes about engraving and how it is applied to writing.

As any good historian she finds and arranges facts in a meaningful pattern. However, instead of imposing our romantic meaning on the historical attitude, she departs from the mannerist meaning of Mannerism. Only by choosing the calligraphic inscriptions in mannerist prints as her subject she cuts off any attempt to explain the calligraphic explosion from the economic needs of expanding trade and diplo-

macy. In her prints calligraphy has a more self sufficient reason than a poem or a painting; it is there for its own sake only. For this sake of abstract graphic art the writing books were designed and written and this is why they were engraved on copper.

As long as romantic readers want romantic stories, such as told, for instance, in the romantic transformations of the classic Middle Ages by Walter Scott and Umberto Eco, Amy should not expect much attention for her approach. Typographers and type designers, however, have a reason to follow her guidance in the history of Mannerism because she refutes the opinion that copperplate engraving has influenced handwriting. This refutation is important if we ever hope to understand something of typography and the history type design.

Though essential, the paragraphs on technique are only a small part of the study by Amy Worthen. Detached from their context my selection exaggerates the part of technique whereas it has almost nothing of the historical scene that Amy evokes. The reader who expects an impression of sixteenth and seventeenth century Dutch art still has to read the original essay.

I omitted secondary details. In square brackets I have indicated such omissions. A few additions are indicated in the same way. I inserted them in places where the craftsman could take some profit of details that are less relevant for the general reader. At other occasions I just wanted to show that the same stuff allows different conclusions. Amy generously left the selection to me. I hope that the result will not alarm her.

Techniques of engraving lettering

Extracts from Amy N. Worthen,
Calligraphic Inscriptions on Dutch Mannerist Prints
[commented by Gerrit Noordzij]

The authors of writing-books were reluctant to entrust their precious manuscripts, often the products of years of work, to an engraver in whose hands their reputation might rest. Calligraphers were torn between the desire to publish and the fear that an unskilled or insensitive engraver would distort their letter forms. Ideally, the calligrapher would be an engraver, or would have the engraver under closest supervision. The English calligrapher Martin Billingsley expressed

this concern in his book, *The pen's excellencie*, but he also explained that sometimes an engraver could improve the work of the calligrapher.

Osley has contended that the graver stroke influenced the look of late sixteenth century writing for the worse. But as much as the swelling line of a printed 'pen stroke' may look like the track of the square or lozenge graver cutting through copper, the act of cutting a line to look like a pen stroke is highly artificial and alien to the engraving process, and is unlikely to have influenced writing styles one way or the other. The engraver's job was simply to reproduce the writing-master's calligraphy. The various styles of Italian and northern scripts had been established with pen and paper and were originally published in woodcut. Copperplate engraving was merely the happy innovation in 1569 that made the printed reproductions of the lettering more nearly facsimiles. Line engraving was well suited for imitating the swelling strokes of the rounded, pressure-sensitive pen used in the late sixteenth century for the chancery hand, but it was also suited for the running secretary scripts. Once copperplate engraving became a possibility for reproducing any style of writing, calligraphers never looked back to woodcut. Had lithography been available at that time, there is no ques-

tion that it would have been used instead. [Remains the question why a few contemporary printmakers such as my American lady prefer copperplate engraving to lithography.]

Few descriptions of the techniques for engraving lettering on metal printing plates have survived from the past. In the following discussion of technique a certain amount of information is extrapolated from the visual evidence of the lettering itself as well as from the techniques of traditional letter hand engravers practising today.

The first step in preparing a plate for lettering was to design and transfer the lettering to the plate. Simple lettering such as the basic italic used for maps and prints, could be easily scribed (drypointed) backwards, freehand, with a needle, directly on the plate on which guide lines had been ruled, and then engraved. [follow details]

Another method for more complex designs such as title pages, would have involved the transfer to the copper plate of a design first drawn in ink or chalk – in reverse – on paper. [follow details]

The magnificent engraved writing books of the Netherlands could not possibly have been scribed freehand and backwards directly on the plate. It isn't conceivable that even the astonishing virtuoso Jan van den Velde has been able to

execute all his original exemplars backwards for a book like the *Spiegel*. Such a major calligraphic performance has to have been written by the master as accustomed, with quill and ink on paper, and somehow transferred to the plate. [Contrarily I am sure that both Van den Velde and Frysus could have transferred the original freehand and mirror-wise on copper because it would not even be too difficult for me, though I have much less experience than these giants. The essential trick is to turn the plate 90° for writing. The technique of the following description, however, is more convenient.]

Late seventeenth century printmaking manuals discuss a lettering transfer process. The two earliest descriptions known to this writer are in William Salmon's *Polygraphics*. The critical procedure revealed by Salmon is the use of ungummed transfer ink. Normal writing inks used by a calligrapher, such as oak gall ink, which included a binder of gum arabic would not transfer to engraving plate. [This is true but not entirely. The ferrosulphate in the ink etches copper. I got a perfect transfer by just laying a copperplate on the dry writing. After a day or so the writing had dulled the polished surface of the plate with a distinct image. To make this method practical it should be speeded up. I made some attempts

without much result. Ferrochloride, a common agent for etching on copper, might yield a better result.] But letters written in ungummed ink (essentially pigment suspended in water) do not adhere to the paper writing surface and therefore transfer to the plate when pressure is applied with a burnisher. Although the dry ink pigment transfers to the waxed plate, much remains on the paper as well, so the engraver can consult the original written in the proper direction. [Burnishing might be suitable for small subjects; for elaborate designs I find it safer to pass the plate covered with the original through the press. Pressing does not stretch the paper as much as burnishing and you can be sure that nothing is forgotten. Amy says: 'much remains on the paper'. I found that the original does not even look faded. Ungummed or ink with little gum also writes more crisply than common ink with a low surface tension.]

In an extraordinary example of survival, the original manuscript for one of the greatest of all writing books, Jan van den Velde's *Spiegelhel* is preserved at the Rijksprentenkabinet. It is mounted in an engraved copy of the *Spiegelhel*, with each manuscript page facing its engraved twin. There are several striking things about the manuscript which reveal valuable information about the design and transfer process. First, as

Van Uchelen has noted, the intense black ink does not resemble the brown-toned oak gall inks commonly found on sixteenth and seventeenth century drawings and manuscripts. [Beware: artists of the time were fond of brownish bistre as pigment in drawing inks. Rembrandt is a famous example.] Surely then, Van den Velde wrote his manuscript with a lampblack or other carbon-based ungummed transfer ink. Second, there are no construction lines on the manuscript. Although it appears to have been executed freehand, without resort to ruled guide lines, van den Velde must have used a false rule. These are guide lines on a separate sheet placed underneath, a fairly standard procedure described by many writing-masters. The manuscript is mounted down, but in places it is possible to slide a printed card underneath and see that the paper is relatively translucent. Finally, there are several places in the manuscript where corrections were made by cutting out an error and piecing in new paper with the improved design or letters. But the corrections are few, and the manuscript demonstrates Van den Velde's dazzling mastery of the art of writing.

[...]

The lettering engraver faces a number of technical problems not encountered either by the calligrapher or by the

pictorial engraver. The sequence of cutting is not simply right-to-left, following the order of written letters. No single letter was entirely cut at one time; rather, all the verticals in a line might be engraved at once, followed by the bodies, then the serifs. Like the pictorial engraver, the letter engraver often sees his work upside down and backwards, but where the pictorial engraver might have had to make himself familiar with a few artist's differing drawing styles, the calligraphic letter engraver had to deal with a variety of specialised, fanciful and even bizarre hands written in a variety of foreign languages, all seen written right to left. The letter-engraver really had to understand what he was engraving.

The width of lines in lettering is often considerably greater than the widest line ever cut for a picture. The engraver had to develop strategies to cut wide lines that would print black. The engraver can't cut a single line wider than about 3 mm because the line won't hold its ink when the plate is wiped. Moreover, the resistance of the copper to the engraving tool is great, and the excessive force required to cut a deep, wide line works against all-important precise control. [This is why I use hammer and chisel for cutting deep wide lines in metal, not for print making but for name plates.

Without a mallet I cannot control a stroke in copper as wide

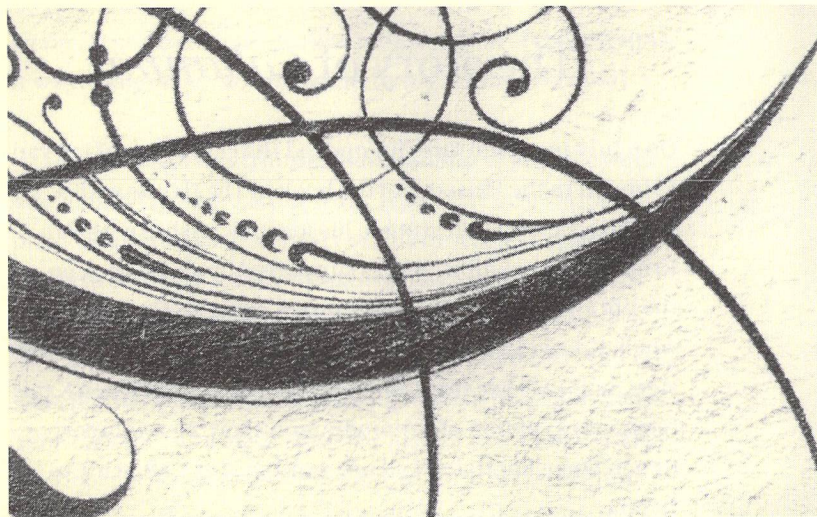
as 3 mm. Perhaps Amy intended to write '0.3 mm'.] The calligraphy engraver's job was to exactly reproduce the mark made by the writing-master's flexible quill pen. Since this pen stroke could be considerably wider than any graver cut, the engraved line had to be built up out of many strokes. Engravers seem to have developed personal systems for cutting an ostensibly wide line to imitate the calligrapher's pen stroke.

Recently, the contemporary Dutch graphic designer Gerit Noordzij originated a method for studying early Dutch letter engraver's techniques. He photographed selected examples of engraved calligraphy under a strong light set at an extreme raking angle. His enlarged photographs clearly reveal the characteristic techniques of four Dutch engravers: Gerard Gauw, Simon Frisius, Hans Strick, and Cornelis Boisens. Under magnification it is easy to see that each engraver first outlined the shape of the letter, then filled it in. Gauw used haphazard cross-hatching. Even seen with the naked eye, Gauw's letters were the least precise or attractive of the group. Noordzij found that Simon Frisius filled in the letter outlines by cutting strokes which lie in continuous tangent to the changing direction of the letterform. The result is a very lively letter.

[From earlier work by Frisius Amy concludes that he has refined his technique after 1600.]

According to Noordzij, Hans Strick used a more delicate version of Frisius' technique, with very fine lines. Cornelis Boissens used a different approach, laying down many parallel lines, similar to today's 'threading' or 'close-lining', to build up width. Each of these engravers used techniques that would only be possible if he worked with a strong magnifying lens. [In my experience such a difference as between the stroke of Frisius and that of Strick could well be the difference between working without or with a magnifying lens. The question of the magnifying lens is almost trivial as a near-sighted engraver only has to lay his spectacles aside to obtain the ideal position. I find precise engraving easy when compared to precise drawing. To return exactly to an engraved line, the engraver can slide his graver over the surface of the plate until it drops into the line. However, in such discussions much depends on what is considered as precise.]

Noordzij's photographic identification technique can be applied to any engraver's work. [The section ends with a few paragraphs about the techniques of several engravers illustrated with details photographed in the described manner.]



Hans Strick

The story of *Columna*

On 6 July 1995 John Dreyfus opened the exhibition of Jan van Krimpen in the Museum of the book in The Hague with a sparkling speech referring to his long friendship with Van Krimpen. The exhibition was supported by a new book on the life and work of Jan van Krimpen *Adieu aesthetica [...]*, in which Koosje Sierman, writing about Van Krimpen's type design, squeezes her story about Dubbel Augustijn Open Kapitalen into a caption of a reproduction showing a composition in Open Kapitalen and one word in Max Caflisch' *Columna*:

'Twenty-five years after the alphabet of Roman and Greek capitals from 1927 the Bauersche Schriftgießerei released the related *Columna* of the Swiss designer Max Caflisch. Comparing him with G. W. Ovink Van Krimpen blamed Dr. Bauer furiously for a superficial understanding of type design, accusing him for releasing *Columna* while knowing about the Open Kapitalen. *Columna*, he concluded, should be withdrawn.'

A reduced drawing of a Roman inscription in Hübner's *Exempla epigraphicae latinae* is reproduced on the same page.

With the assumption that the same book inspired Max Caflisch as well, the caption follows John Dreyfus' *The work of Jan van Krimpen*, 1952.

The opening of the exhibition was attended by many type designers of 'the school' of The Hague, once referred to tenderly by Max Caflisch as 'the Dutch Mafia'. We talked far into the night. When touching the subject of *Columna* doubts arose about the new book. First of all, designers do not see a special relationship between *Columna* and Open Capitals besides the irrelevant fact that both typefaces are drawn in outline. If this would matter thousands of solid typefaces, all titling founts at least, show a similar resemblance.

I mentioned Max Caflisch' portfolio with rubbings and photographs of inscriptions in the Roman theatre of Avenches. *Columna* might reflect these studies.

Couldn't I ask my old friend Max Caflisch himself? my young colleagues suggested.

Max replied my letter with his story of *Columna*. Here it is in my translation.

Max Caflisch

When in 1943 the printing firm of Benteli AG in Bern-Bümpliz entrusted me with the care for the production they had only a few good typefaces. Gradually I extended the collection which gave Benteli a leading position in Switzerland.

In 1948 I designed *Das Leben im alten Rom* with an initial at the beginning of each of its ten chapters. Trial pages made

clear that Perpetua Titling 258 dominated too much the text in Garamond 156. As moreover the initials did not match the height of three lines of text, I decided to make new drawings for the required characters A D H I M P U W Z. Our process engraver employed a German punch cutter who crisply cut the shallowly etched zinc blocks. Similar open capitals were used on the title page. The characters S P Q R were cut in brass for the cover. The publisher received the book with satisfaction.

A B C D E F G H
I J K L M M N N
O P Q R R S T U
V W X Y Z

A B C D E F G
H I J K L M N O P
Q R S T U V W
X Y Z

In 1949 a type specimen book was released showing my ten open capitals among Weiß titling (afterwards called Weiß-Lapidar) and Mediäval-Initialen, a fount from the old stock of the printer.

A few months later I designed a bibliophile production intended for the inauguration of the 'Istituto Svizzero di Roma.' The text in Perpetua was combined with initials in colour for which I used my open capitals again. But for seven characters the alphabet was complete now.

In 1950 or 1951 I visited the Bauer type foundry in Frankfurt on my way home from the Drupa exhibition in Düsseldorf. Together with other samples of my work for Benteli I showed Dr. Konrad Bauer the applications of the open capitals. In the course of our conversation he proposed me to release the open capitals as a Bauer typeface. Flattered with the proposal I completed the fount with numerals. In due time I delivered the art work. The production of the much demanding design took several years. Probably on the occasion of the 1954 Drupa the typeface was announced with a prospectus. For the actual specimen I designed the applications of the typeface. In 1955 the typeface called Columna became available. Rudolf Hostettler reviewed Columna and its history in an article in his renowned Swiss printing magazine *Ty-*

pografische Monatsblätter, 1955, pp. 503–506.

When in 1948 I made my first drawings for Columna I did not know about Jan van Krimpen's Open Kapitalen. I saw them for the first time in John Dreyfus' book on Van Krimpen or in the *Penrose Annual 1953*. In that time I visited the exhibition on the history of the house Enschedé in Haarlem and on that occasion I met with Flip Mayer who introduced me to Jan van Krimpen. I do not remember if I showed my work on that occasion. When I saw the Open Kapitalen for the first time I found them more elegant than my somewhat stiff Columna capitals, which is still my opinion. I consider Columna as an independent design. The incidental resemblance only comes from a mutual background. Only much later I discovered the collection *Exempla scripturae epigraphicae*. I knew the Roman inscription of the Trajan column from Jan Tschichold, *Geschichte der Schrift in Bildern*, 1940, and *Gute Schriftformen*, 1942. I was also familiar with the Roman inscriptions in Avenches. I could go there by train in about one hour. Notably the inscription of the Sphaeristerium (now in Lausanne) and the inscription in the wall of the theatre fascinated me. I have reproduced the inscriptions in *Römische Kapitalis in Avenches*, 1970. I visited the place often. These studies laid

the foundation for my design of Columna.

My knowledge of writing does not come from regular study; I had to collect it myself. My family was rather poor. My father was tinner and my mother worked in a laundry. My wish of going to college could not be fulfilled. My parents urged me to learn a profession. It was not at all self-evident that I could follow the course for composers at the Kunstgewerbeschule in Zürich. It was there that I came in touch with the work of Rudolf Koch. When a teacher showed Tschichold's new book *Typografische Gestaltung* in his class I obtained a personal copy that became my lodestar. I found a job at Schwabe in Basel, where Jan Tschichold was in charge of design. Encouraged by his personality and his work and also by the Basel exhibition *Die Erfindung Gutenbergs*, 1941, I found my way to the history of printing, of writing and typography. I became acquainted with the excellent libraries of the Gewerbemuseum and the Basel university and of the Gewerbemuseum Bern. As far as my modest means allowed me I obtained gradually my own library.

I am not sure that I would ever have finished the alphabet of my open capitals if I had not visited the Bauer foundry in 1950 or 1951. Two other designs originated from actual jobs, shadow capitals and an italic, remained unfinished.

It is silly to learn that the facts about the open capitals presented already by Rudolf Hostettler in 1955 are still ignored by insiders who ought to know. Fretz in Zürich, at that time the printer of *Typographische Monatsblätter*, had Luteitia, and I knew Romulus from Monotype specimen sheets. Jan van Krimpen's other typefaces were not known in Switzerland before the fifties. Dreyfus' book and the *Penrose annual* offered the first information.

Compulsory military service before the war and mobilisation during the war did not further my typographic studies. I had no access to the essential professional literature. It took me 25 years to collect all volumes of *The Fleuron* and only in 1993 I obtained the 12 issues of *Signature*. Today my typographic library surpasses many public and private Swiss collections. Then professional knowledge could only be gathered at great efforts.

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