



INTRODUCTORY CHAPTER



THE TYPES AND TYPEFOUNDING OF THE FIRST PRINTERS.



FOR four centuries the noise of controversy has raged round the cradle of Typography. Volumes have been written, lives have been spent, fortunes have been wasted, communities have been stirred, societies have been organised, a literature has been developed, to find an answer to the famous triple question: "When, where, and by whom was found out the unspeakably useful art of printing books?" And yet the world to-day is little nearer a finite answer to the question than it was when Ulric Zel indited his memorable narrative to the *Cologne Chronicle* in 1499. Indeed, the dust of battle has added to, rather than diminished, the mysterious clouds which envelope the problem, and we are tempted to seek refuge in an agnosticism which almost refuses to believe that printing ever had an inventor.

It would be neither suitable nor profitable to encumber an investigation of that part of the History of Typography which relates to the types and type-making of the fifteenth century by any attempt to discuss the vexed question of the Invention of the Art. The man who invented Typography was doubtless the man who invented movable types. Where the one is discovered, we have also found the other. But, meanwhile, it is possible to avail ourselves of whatever evidence exists as to the nature of the types he and his successors used, and as to the methods by which those types were produced, and possibly to

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arrive at some conclusions respecting the earliest practices of the Art of Type-founding in the land and in the age in which it first saw the light.

No one has done more to clear the way for a free investigation of all questions relating to the origin of printing than Dr. Van der Linde, in his able essay, *The Haarlem Legend*,¹ which, while disposing ruthlessly of the fiction of Coster's invention, lays down the important principle, too often neglected by writers on the subject, that the essence of Typography consists in the mobility of the types, and that, therefore, it is not a development of the long practised art of printing from fixed blocks, but an entirely distinct invention.

The principle is so important, and Dr. Van der Linde's words are so emphatic, that we make no apology for quoting them:—

“I cannot repeat often enough that, when we speak of Typography and its invention, nothing is meant, or rather nothing must be meant, but printing with *loose* (separate, moveable) types (be they letters, musical notes, or other figures), which therefore, in distinction from letters cut on wooden or metal plates, may be put together or separated according to inclination. One thing therefore is certain: he who did not invent printing with moveable types, did, as far as Typography goes, invent nothing. What material was used first of all in this invention; of what metal the first letters, the patrices (engraved punches) and matrices were made; by whom and when the leaden matrices and brass patrices were replaced by brass matrices and steel patrices; all this belongs to the secondary question of the technical execution of the principal idea: multiplication of books by means of multiplication of letters, multiplication of letters by means of their durability, and repeated use of the same letters, *i.e.*, by means of the independence (looseness) of each individual letter (moveableness).”—P. 19.

If this principle be adopted—and we can hardly imagine it questioned—it will be obvious that a large class of works which usually occupy a prominent place in inquiries into the origin of Printing, have but slight bearing on the history of Typography. The block books of the fifteenth century had little direct connection with the art that followed and eclipsed them.² In the one respect of marking the early use of printing for the instruction of mankind, the block books and the first works of Typography proper claim an equal interest; but, as regards their mechanical production, the one feature they possess in common is a quality shared also by the playing-cards, pictures, seals, stamps,

¹ *The Haarlem Legend of the Invention of Printing by Lourens Janszoon Coster, critically examined.* From the Dutch by J. H. Hessels, with an introduction and classified list of the Costerian Incunabula. London, 1871. 8vo.

² Xylography did not become extinct for more than half a century after the invention of Typography. The last block book known was printed in Venice in 1510.

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brands, and all the other applications of the principle of impression which had existed in one form or another from time immemorial.

It is reasonable to suppose that the first idea of movable type may have been suggested to the mind of the inventor by a study of the works of a xylographic printer, and an observation of the cumbrous and wearisome method by which his books were produced. The toil involved in first painfully tracing the characters and figures, reversed, on the wood, then of engraving them, and, finally, of printing them with the frotton, would appear—in the case, at any rate, of the small school-books, for the production of which this process was largely resorted to—scarcely less tedious than copying the required number by the deft pen of a scribe. And even if, at a later period, the bookmakers so far facilitated their labours as to write their text in the ordinary manner on prepared paper, or with prepared ink, and so transfer their copy, after the manner of the Chinese, on to the wood, the labour expended in proportion to the result, and the uselessness of the blocks when once their work was done, would doubtless impress an inventive genius with a sense of dissatisfaction and impatience. We can imagine him examining the first page of an *Abecedarium*, on which would be engraved, in three lines, with a clear space between each character, the letters of the alphabet, and speculating, as Cicero had speculated centuries before,¹ on the possibilities presented by the combination in indefinite variety of those twenty-five symbols. Being a practical man as well as a theorist, we may suppose he would attempt to experiment on the little wood block in his hand, and by sawing off first the lines, and then some of the letters in the lines, attempt to arrange his little types into a few short words. A momentous experiment, and fraught with the greatest revolution the world has ever known!

No question has aroused more interest, or excited keener discussion in the history of printing, than that of the use of movable wooden types as a first stage in the passage from Xylography to Typography. Those who write on the affirmative side of the question profess to see in the earlier typographical works, as well as in the historical statements handed down by the old authorities, the

¹ “Hic ego non mirer esse quemquam qui sibi persuadeat . . . mundum effici . . . ex concursione fortuitâ! Hoc qui existimet fieri potuisse, non intelligo cur non idem putet si innumerabiles unius et viginti formæ litterarum, vel aureæ, vel qualeslibet, aliquò conjiciantur, posse ex his in terram excussis, annales Ennii, ut deinceps legi possint, effici” (*De Nat. Deor.*, lib. ii). Cicero was not the only ancient writer who entertained the idea of mobile letters. Quintilian suggests the use of ivory letters for teaching children to read while playing: “Eburneas litterarum formas in ludum offere” (*Inst. Orat.*, i, cap. 1); and Jerome, writing to Læta, propounds the same idea: “Fiant ei (Paulæ) litteræ vel buxæ vel eburneæ, et suis nominibus appellentur. Ludat in eis ut et lusus ipse eruditio fiat.”

clearest evidence that wooden types were used, and that several of the most famous works of the first printers were executed by their means.

As regards the latter source of their confidence, it is at least remarkable that no single writer of the fifteenth century makes the slightest allusion to the use of wooden types. Indeed, it was not till Bibliander, in 1548,¹ first mentioned and described them, that anything professing to be a record on the subject existed. "First they cut their letters," he says, "on wood blocks the size of an entire page, but because the labour and cost of that way was so great, they devised movable wooden types, perforated and joined one to the other by a thread."

The legend, once started, found no lack of sponsors, and the typographical histories of the sixteenth century and onward abound with testimonies confirmatory more or less of Bibliander's statement. Of these testimonies, those only are worthy of attention which profess to be based on actual inspection of the alleged perforated wooden types. Specklin² (who died in 1589) asserts that he saw some of these relics at Strasburg. Angelo Roccha,³ in 1591, vouches for the existence of similar letters (though he does not say whether wood or metal) at Venice. Paulus Pater,⁴ in 1710, stated that he had once seen some belonging to Fust at Mentz; Bodman, as late as 1781, saw the same types in a worm-eaten condition at Mentz; while Fischer,⁵ in 1802, stated that these precious relics were used as a sort of token of honour to be bestowed on worthy apprentices on the occasion of their finishing their term.

This testimony proves nothing beyond the fact that at Strasburg, Venice, and Mentz there existed at some time or other certain perforated wooden types which tradition ascribed to the first printers. But on the question whether any book was ever printed with such type, it is wholly inconclusive. It is possible to believe that certain early printers, uninitiated into the mystery of the punch and matrix, may have attempted to cut themselves wooden types, which, when they proved untractable under the press, they perforated and strung together in lines;

¹ *In Commentatione de ratione communi omnium linguarum et literarum.* Tiguri, 1548, p. 80.

² In *Chronico Argentoratensi*, m.s. ed. Jo. Schilterus, p. 442. "Ich habe die erste press, auch die buchstaben gesehen, waren von holtz geschnitten, auch gântze wörter und syllaben, hatten zeichle, und fasst man an ein schnur nacheinander mit einer nadel, zoge sie darnach den zeilen in die länge," etc.

³ *De Bibliothecâ Vaticanâ.* Romæ, 1591, p. 412. "Characteres enim a primis illis inventoribus non ita eleganter et expedite, ut a nostris fieri solet, sed filo in litterarum foramen immisso connectebantur, sicut Venetiis id genus typos me vidisse memini."

⁴ *De Germaniæ Miraculo*, etc. Lipsiæ, 1710, p. 10. ". . . ligneos typos, ex buxi frutice, perforatos in medio, ut zonâ colligari unâ jungique commode possint, ex Fausti officina reliquos, Moguntiæ aliquando me conspexisse memini."

⁵ *Essai sur les Monumens Typographiques de Jean Gutenberg.* Mayence, an 10, 1802, p. 39.

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but it is beyond credit that any such rude experiment ever resulted in the production of a work like the *Speculum*.

It is true that many writers have asserted it was so. Fournier, a practical typographer, insists upon it from the fact that the letters vary among themselves in a manner which would not be the case had they been cast from a matrix in a mould. But, to be consistent, Fournier is compelled (as Bernard points out) to postpone the use of cast type till after the Gutenberg *Bible* and Mentz *Psalter*, both of which works display the same irregularities. And as the latest edition of the *Psalter*, printed in the old types, appeared in 1516, it would be necessary to suppose that movable wood type was in vogue up to that date. No one has yet demonstrated, or attempted seriously to demonstrate, the possibility of printing a book like the *Speculum* in movable wooden type. All the experiments hitherto made, even by the most ardent supporters of the theory, have been woful failures. Laborde¹ admits that to cut the 3,000 separate letters required for the *Letters of Indulgence*, engraved by him, would cost 450 francs; and even he, with the aid of modern tools to cut up his wooden cubes, can only show four widely spaced lines. Wetter² shows a page printed from perforated and threaded wooden types³; but these, though of large size, only prove by their

¹ *Débuts de l'Imprimerie à Strasbourg*. Paris, 1840, p. 72.

² *Erfindung der Buchdruckerkunst*. Mainz, 1836. Album, tab. ii.

³ The history of these "fatal, unhistorical wooden types" is worth recording for the warning of the over-credulous typographical antiquary. Wetter, writing his book in 1836, and desirous to illustrate the feasibility of the theory, "spent," so Dr. Van der Linde writes, "really the amount of ten shillings on having a number of letters made of the wood of a pear-tree, only to please Trithemius, Bergellanus, and Faust of Aschaffenburg. . . . His letters, although tied with string, did not remain in the line, but made naughty caprioles. The supposition—that by these few dancing lines the possibility is demonstrated of printing with 40,000 wooden letters, necessary to the printing of a quaternion, a whole folio book—is dreadfully silly. The demonstrating facsimile demonstrates already the contrary. Wetter's letters not only declined to have themselves regularly printed, but they also retained their pear-tree-wood-like impatience afterwards." The specimen of these types may be seen in the *Album* of plates accompanying Wetter's work, where they occupy the first place, the matter chosen being the first few verses of the Bible, occupying nineteen lines, and the type being about two-line English in body. M. Wetter stated in his work that he had deposited the original types in the Town Library of Mentz, where they might be inspected by anyone wishing to do so. From this repository they appear ultimately to have returned to the hands of M. Wetter's printer. M. Bernard, passing through Mentz in 1850, asked M. Wetter for a sight of them, and was conducted to the printing office for that purpose, when it was discovered that they had been stolen; whereupon M. Bernard remarks, prophetically, "Peut-être un jour quelque naïf Allemand, les trouvant parmi les reliques du voleur, nous les donnera pour les caractères de Gutenberg. Voilà comment s'établissent trop souvent les traditions." This prediction, with the one exception of the nationality of the victim, was literally fulfilled when an English clergyman, some years afterwards, discovered these identical types in the shop of

“naughty caprioles” the absurdity of supposing that the “unleaded” *Speculum*, a quarterion of which would require 40,000 distinct letters, could have been produced in 1440 by a method which even the modern cutting and modern presswork of 1836 failed to adapt to a single page of large-sized print.

John Enschedé, the famous Haarlem typefounder, though a strong adherent to the Coster legend, was compelled to admit the practical impossibility, in his day at any rate, of producing a single wood type which would stand the test of being mathematically square; nor would it be possible to square it after being cut. “No engraver,” he remarks, “is able to cut separate letters in wood in such a manner that they retain their quadrature (for that is the main thing of the line in type-casting).”¹ Admitting for a moment that some printer may have succeeded in putting together a page of these wooden types, without the aid of leads, into a chase: how can it be supposed that after their exposure to the warping influences of the sloppy ink and tight pressure during the impression, they could ever have survived to be distributed and recomposed into another forme?²

The claims set up on behalf of movable wood types as the means by which the *Speculum* or any other of the earliest books was printed, are not only historically unsupported, but the whole weight of practical evidence rejects them.

Dismissing them, therefore, from our consideration, a new theory confronts us, which at first blush seems to supply, if not a more probable, certainly a more possible, stepping-stone between Xylography and Typography. We refer to what Meerman, the great champion of this theory, calls the “sculpto-fusi”

a curiosity-dealer at Mayence, and purchased them as apparently veritable relics of the infancy of printing. After being offered to the authorities at the British Museum and declined, they were presented in 1869 to the Bodleian Library at Oxford, where they remain to this day, treasured in a box, and accompanied by a learned memorandum setting forth the circumstances of their discovery, and citing the testimony of Roccha and other writers as to the existence and use of perforated types by the early printers. The lines (which we have inspected) remain threaded and locked in forme exactly as they appear in Wetter’s specimen. It is due to the present authorities of the Bodleian to say that they preserve these precious “relics,” without prejudice, as curiosities merely, with no insistence on their historic pretensions.

¹ Van der Linde, *Haarlem Legend*. Lond., p. 72.

² Skeen, in his *Early Typography*, Colombo, 1872, takes up the challenge thrown down by Dr. Van der Linde on the strength of Enschedé’s opinion, and shows a specimen of three letters cut in boxwood, pica size, one of which he exhibits again at the close of the book after 1,500 impressions. But the value of Skeen’s arguments and experiments is destroyed when he sums up with this absurd dictum: “Three letters are as good as 3,000 or 30,000 or 300,000 to demonstrate the fact that words are and can be, and that therefore pages and whole books may be (and therefore also that they may have been) printed from such separable wooden types.”—P. 424.

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characters: types, that is, the shanks of which have been cast in a quadrilateral mould, and the “faces” engraved by hand afterwards.

Meerman and those who agree with him engage a large array of testimony on their side. In the reference of Celtis, in 1502, to Mentz as the city “quæ prima sculpsit solidos ære characteres,” they see a clear confirmation of their theory; as also in the frequent recurrence of the same word “sculptus” in the colophons of the early printers. Meerman, indeed, goes so far as to ingeniously explain the famous account of the invention given by Trithemius in 1514,¹ in the light of his theory, to mean that, after the rejection of the first wooden types, “the inventors found out a method of casting the bodies only (*fundendi formas*) of all the letters of the Latin alphabet from what they called matrices, on which they cut the face of each letter; and from the same kind of matrices a method was in time discovered of casting the complete letters (*æneos sive stanneos characteres*) of sufficient hardness for the pressure they had to bear, which letters before—that is, when the bodies only were cast—they were obliged to cut.”²

After this bold flight of translation, it is not surprising to find that Meerman claims that the *Speculum* was printed in “sculpto-fusi” types, although in the one page of which he gives a facsimile there are nearly 1,700 separate types, of which 250 alone are *e*’s.

Schoepflin, claiming the same invention for the Strasburg printers, believes that all the earliest books printed there were produced by this means; and both Meerman and Schoepflin agree that engraved metal types were in use for many years after the invention of the punch and matrix, mentioning, among others so printed, the Mentz *Psalter*, the *Catholicon* of 1460, the Eggstein *Bible* of 1468, and even the *Nideri Præceptorium*, printed at Strasburg as late as 1476, as “literis in ære sculptis.”

Almost the whole historical claim of the engraved metal types, indeed, turns on the recurrence of the term “sculptus” in the colophons of the early printers. Jenson, in 1471, calls himself a “cutter of books” (*librorum exsculptor*). Sensenschmid, in 1475, says that the *Codex Justinianus* is “cut” (*insculptus*), and that he has “cut” (*sculpsit*) the work of *Lombardus in Psalterium*. Husner of Strasburg, in 1472, applies the term “printed with letters cut of metal” (*exsculptis*

¹ *Annales Hirsaugienses*, ii, p. 421: “Post hæc inventis successerunt subtiliora, inveneruntque modum fundendi formas omnium Latini Alphabeti literarum quas ipsi matrices nominabant; ex quibus rursum æneos sive stanneos characteres fundebant, ad omnem pressuram sufficientes, quos prius manibus sculpebant.” Trithemius’ statement, as every student of typographical history is aware, has been made to fit every theory that has been propounded, but it is doubtful whether any other writer has stretched it quite as severely as Meerman in the above rendering of these few Latin lines.

² *Origines Typographicae*, Gerardo Meerman auctore. Hagæ Com., 1765. Append., p. 47.

ære litteris) to the *Speculum Durandi*; and of the *Præceptorium Nideri*, printed in 1476, he says it is “printed in letters cut of metal by a very ingenious effort” (litteris exsculptis artificiali certe conatu ex ære). As Dr. Van der Linde points out, the use of the term in reference to all these books can mean nothing else than a figurative allusion to the first process towards producing the types, namely, the cutting of the punch¹; just as when Schoeffer, in 1466, makes his *Grammatica Vetus Rhythmica* say, “I am cast at Mentz” (At Moguntia sum fusus in urbe libellus), he means nothing more than a figurative allusion to the casting of the types.

The theory of the sculpto-fusi types appears to have sprung up on no firmer foundation than the difficulty of accounting for the marked irregularities in the letters of the earliest printed books, and the lack of a theory more feasible than that of movable wood type to account for it. The method suggested by Meerman seemed to meet the requirements of the case, and with the aid of the very free translation of Trithemius’ story, and the very literal translation of certain colophons, it managed to get a footing on the typographical records.

Mr. Skeen seriously applies himself to demonstrate how the shanks could be cast in clay moulds stamped with a number of trough-like matrices representing the various widths of the blanks required, and calculates that at the rate of four a day, 6,000 of these blanks could be engraved on the end by one man in five years, the whole weighing 100 lb. when finished! “No wonder,” Mr. Skeen naïvely observes, “that Fust at last grew impatient.” We must confess that there seems less ground for believing in the use of “sculpto-fusi” types as the means by which any of the early books were produced, than in the perforated wood types. The enormous labour involved, in itself renders the idea improbable. As M. Bernard says, “How can we suppose that intelligent men like the first printers would not at once find out that they could easily cast the face and body of their types together?”² But admitting the possibility of producing type in this manner, and the possible obtuseness which could allow an inventor of printing to spend five years in laboriously engraving “shanks” enough for a single forme, the lack of any satisfactory evidence that such types were ever used, even experimentally, inclines us to deny them any place in the history of the origin of typography.

Putting aside, therefore, as improbable, and not proved, the two theories of

¹ The constant recurrence in more modern typographical history of the expression “to cut matrices,” meaning of course to cut the punches necessary to form the matrices, bears out the same conclusion.

² *Origine et Débuts de l’Imprimerie en Europe*. Paris, 1853, 8vo, i, 38.

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engraved movable types, the question arises, Did typography, like her patron goddess, spring fully armed from the brain of her inventor? in other words, did men pass at a single stride from xylography to the perfect typography of the punch, the matrix, and the mould? or are we still to seek for an intermediate stage in some ruder and more primitive process of production? To this question we cannot offer a better reply than that contained in the following passage from Mr. Blades's admirable life of Caxton.¹ "The examination of many specimens," he observes, "has led me to conclude that two schools of typography existed together . . . The ruder consisted of those printers who practised their art in Holland and the Low Countries, . . . and who, by degrees only, adopted the better and more perfect methods of the . . . school founded in Germany by the celebrated trio, Gutenberg, Fust, and Schoeffer."

It is impossible, we think, to resist the conclusion that all the earlier works of typography were the impression of cast metal types; but that the methods of casting employed were not always those of matured letter-founding, seems to us not only probable, but evident, from a study of the works themselves.

Mr. Theo. De Vinne, in his able treatise on the invention of printing,² speaking with the authority of a practical typographer, insists that the key to that invention is to be found, not in the press nor in the movable types, but in the adjustable type-mould, upon which, he argues, the existence of typography depends. While not prepared to go as far as Mr. De Vinne on this point, and still content to regard the invention of movable types as the real key to the invention of typography proper, we find in the mould not only the culminating achievement of the inventor, but also the key to the distinction between the two schools of early typography to which we have alluded.

The adjustable mould was undoubtedly the goal of the discovery, and those who reached it at once were the advanced typographers of the Mentz press. Those who groped after it through clumsy and tedious by-ways were the rude artists of the *Donatus* and *Speculum*.

In considering the primitive modes of type-casting, it must be frankly admitted that the inquirer stands in a field of pure conjecture. He has only negative evidence to assure him that such primitive modes undoubtedly did exist, and he searches in vain for any direct clue as to the nature and details of those methods.

We shall briefly refer to one or two theories which have been propounded, all with more or less of plausibility.

Casting in sand was an art not unknown to the silversmiths and trinket-

¹ *Life and Typography of William Caxton*. London, 1861-3, 2 vols, 4to, ii, xxiv.

² *The Invention of Printing*. New York, 1876. 8vo.

makers of the fifteenth century, and several writers have suggested that some of the early printers applied this process to typefounding. M. Bernard¹ considers that the types of the *Speculum* were sand-cast, and accounts for the varieties observable in the shapes of various letters, by explaining that several models would probably be made of each letter, and that the types when cast would, as is usual after sand-casting, require some touching up or finishing by hand. He shows a specimen of a word cast by himself by this process, which, as far as it goes, is a satisfactory proof of the possibility of casting letters in this way.² There are, indeed, many points in this theory which satisfactorily account for peculiarities in the appearance of books printed by the earliest rude Dutch School. Not only are the irregularities of the letters in body and line intelligible, but the specks between the lines, so frequently observable, would be accounted for by the roughness on the "shoulders" of the sand-cast bodies.³

An important difficulty to be overcome in type cast by this or any other primitive method would be the absence of uniformity in what letter founders term "height to paper." Some types would stand higher than others, and the low ones, unless raised, would not only miss the ink, but would not appear at all in the impression. The comparative rarity of faults of this kind in the *Speculum*, leads one to suppose that if a process of sand-casting had been adopted, the difficulty of uneven heights had been surmounted either by locking up the forme face downwards, or by perforating the types either at the time of or after casting, and by means of a thread or wire holding them in their places. The uneven length of the lines favours such a supposition, and to the same cause Mr. Ottley⁴ attributes the numerous misprints of the *Speculum*, to correct which in the type would have involved the unthreading of every line in which an error occurred. And as a still more striking proof that the lines were put into the forme one by one, in a piece, he shows a curious printer's blunder at the end of one page, where the whole of the last reference-line is put in upside down, thus:—

Hoe luas bespot slapende ende niet butende.

'sijner xi sijner

¹ *Origine de l'Imprimerie*, i, 40.

² Mr. Blades points out that there are no overhanging letters in the specimen. The necessity for such letters would be, we imagine, entirely obviated by the numerous combinations with which the type of the printers of the school abounded. The body is almost always large enough to carry ascending and descending sorts, and in width, a sort which would naturally overhang, is invariably covered by its following letter cast on the same piece.

³ It is well known that until comparatively recently the large "proscription letters" of our foundries, from three-line pica and upwards, were cast in sand. The practice died out at the close of last century.

⁴ *An Enquiry Concerning the Invention of Printing*. London, 1863, 4to, p. 265.