

THE INFANCY OF PRINTING.

In the year 1420 Conrad III., the newly-elected Prince Archbishop of Mainz, made, in company with the Emperor Ruprecht III., his entry into his archi-episcopal city and see. At that time the bitter feeling which for years had existed between the feudal nobility and the burgesses of Mainz had reached its culminating point. The latter party had just achieved a great triumph and succeeded in inflicting a bitter mortification on their proud opponents, by forcing them to share with themselves the government of the city. Of the two burgomasters, or chief magistrates, one was to be chosen from the ranks of the nobility, and the other from the burgesses, and each party would furthermore be represented in the Council. The nobles, smarting under their defeat, were eager for an opportunity of ahoving their contempt for their adversaries and proclaiming their superiority and their rights over the townsmen. The entry of Ruprecht into their city gave them the opportunity they desired. In the Council the question arose: which of the two burgomasters should have the honour of receiving the emperor. Each side advanced the claims of its representative, but after much wrangling, when the day of the entry arrived, the question remained as undecided as ever. But the nobles, at the eleventh hour, solved the difficulty by riding out, fully armed and accoutred, to meet the emperor, whom they escorted into the city, after having presented their address by the hands of their representative burgomaster. Their action fearfully incensed the citizens who, immediately after Ruprecht's departure, made an open attack upon the nobles, stormed their houses, and finally imposed upon them such humiliating terms of peace, that the majority of them preferred exile to the shame of such a defeat, and left Mainz to seek a refuge, some on their country estates, and others at Frankfort and Oppenheim.

Among the noble families who thus submitted to voluntary exile was that of the Gensfleisch, also known by their territorial title of Gutenberg. Frielo Gensfleisch was one of the wealthiest nobles of Mainz, and owned large properties in and around the city, as well as at Eltville, on the Cassel side of the Rhine. At the time of his departure from Mainz Frielo had two sons, Frielo and Johann. The latter, it would appear, was born about 1397,* and would therefore have been at this time a mere youth. Both the boys had been brought up in a manner befitting their station, but the younger had always evinced a decided preference for study to the knightly exercises and amusements in which his brother took pleasure.

After leaving Mainz the two brothers settled on the family property at Eltville; but Johann, finding in a small village but small scope for the play of his ambition, left Eltville in 1434 and settled in Strasburg. Here he industriously applied himself to mathematical studies and to the practice of what were known as the secret arts, of which certain adepts had an entire monopoly. While carrying on his studies, for he was almost penniless when he arrived in Strasburg, he supported himself by giving instruction in the various branches of his art, and especially in the polishing of jewels, mirror making, and the art of printing by means of wooden blocks.

The latter process was a rough and unsatisfactory one, and was of little use for any other purpose than printing playing cards and coarse devotional pictures. At first the pictures were drawn and coloured by hand. Then a step was made forward. Someone discovered the art of producing impressions from wooden blocks. The outline of the picture desired was first cut in the block, a mixture of soot and water applied, a sheet of paper laid on, and an impression produced by giving a smart blow on the back of the paper with an elastic leathern ball. But this process had its drawbacks. A drop of water falling on the printed outline was sufficient to wash it away; the sharp edge of the wood often cut the paper, and invariably left the outline of the picture in bold relief on the reverse side of the sheet. It was, therefore, impossible to print on both sides of a sheet, and to remedy this defect the printer had recourse to the clumsy expedient of printing two sheets and gumming the reverse sides together. Sometimes a lettered description (in script) accompanied these illustrations—indeed some few works are known to have consisted of letterpress alone—but work of this kind was extremely slow and difficult, and proportionately unremunerative.

Such was the condition of the printer's art as practised by Gutenberg in Strasburg, though it appears that during his stay in the city he made two great improvements in the process. By the addition of grease to his colouring he made the impression more stable and proof against the action of water. But his great improvement was the substitution of the hand-press for the clumsy contrivance hitherto in use. Of these presses he had two kinds. The "form" was made up of four wooden blocks, locked in a frame, or "chase," by means of wedges like our modern "quoins." When ready it was put into the press and the impression taken either by direct pressure on a flat surface, (as seen in the Washington press of the present day), or by passing a heavy roller over the form. Printing this certainly was, but merely printing by means of wooden blocks. Still it was an improvement on the old method. But one thing was wanting to enable Gutenberg to carry out his improvements. Lacking means he was compelled to re-

main idle, until he fortunately fell in with a rich burger of Strasburg, one Andreas Dritzehn, with whom he formed a partnership. It was agreed that the latter should provide the means for carrying on the business, and the profits should be divided between the partners. In 1438 two more partners were admitted, Hans Riffe von Lichtenau and Andreas Heilmann. The business, which appears hitherto to have been confined to jewel-polishing and mirror-making, was extended, and on the instances of the partners, was made to include printing. Each of the three paid the inventor a bonus for the privilege of initiation in the art—for art it was then—and it was further agreed that the profits should be divided as follows, viz. one-half to Gutenberg, a quarter to Riffe, and an eighth part to each of the other two. The arrangement had, however, hardly been made when an event occurred which seriously threatened to overturn all their plans. Dritzehn died, leaving two brothers as his heirs, who immediately demanded that Gutenberg should refund all moneys advanced to him by Dritzehn, or that, as compensation for such a loss, they should be admitted to the partnership on the same terms as their brother. The first Gutenberg flatly refused, and hesitated so long about ceding to the alternative that the case was carried before the courts. Fortunately for the poor printer a verdict was returned in his favour. But naturally the business suffered during the negotiations and we have reason to believe the partnership was dissolved, and Gutenberg found himself once more dependent on his own wits.

Notwithstanding this piece of ill-luck, Fortune was not yet weary of persecuting him. He had hardly got out of one legal scrape than he fell into another. He was once more summoned before the courts, this time to answer a charge brought by a lady of rank, one Ennel zur Eisernen Thur, of having refused to fulfil a contract of marriage that had been drawn up between them. This time the verdict was adverse, and poor Gutenberg was compelled to marry his unloved betrothed. That his married life was not a happy one may be inferred from the fact that he soon after left Strasburg and turned his steps towards his native city.

On his arrival in Mainz he took up his quarters in his uncle's house, where, undeterred by his previous misfortunes, he commenced anew. A press was erected, on which several small books were printed, by the sale of which the enterprising inventor was enabled to support himself for a while. But his ready money soon ran out, and he was compelled to borrow large sums, for the repayment of which his relations gave their security. Besides, the remuneration he received was utterly disproportionate to the outlay necessary to supply the requisite material. Notwithstanding his improvements in the art, he felt that the process in use was not such as would enable a man—especially a poor man like himself—to earn a living by printing. Some easier and cheaper method must be devised. And then, his imagination sharpened by adversity, his inventive genius quickened by the difficulties which surrounded him, he began to plan, and scheme, and devise, until he lit upon the very thing he wanted—the great invention that was to hand his name down to all posterity as the father of the art preservative of all arts. How he came to light upon his invention, the manner in which the idea of moveable types, that might be set and reset, and used time after time again, is not exactly known. We like to picture to ourselves—and there is some reason to support the theory—the man, weary and heartsick after weeks of unsuccessful toil, sitting down in his workshop and listlessly toying with an old, used up wooden block. His engraving tools lie scattered around him. Mechanically he takes one up and begins to scratch figures upon the lettered block. Then, still hardly aware of what he is doing, he separates letter from letter, dividing the surface of the block into rectangular parallelograms. As he gazes at his aimless work a thought flashes across his mind. *Eureka!* he had discovered the secret after which he had been vainly toiling for so many weary days. The dream of his life was accomplished.

Gutenberg did not wait long to turn his invention to profit. Having supplied himself with a sufficient set of letters—in all probability cut with a fine saw from old blocks—he set to work. Each letter was by means of a hole pierced through the shaft, strung, as required, upon wire. When a sufficient number of lines had been set the wires were drawn tight and fastened, the chase put on, and the primitive form was ready to go to press. So far the invention was decidedly a success, but when the inventor stood on the high-road to fortune and fame he found himself—like so many inventors since his day—without the means to prosecute his journey. At this time he appears to have had some connection with a Jacob Fust, a goldsmith and worker in metal—from whom, in all likelihood, he was in the habit of procuring the fine saws and more delicate tools required in the manipulation of his art. Fust seems to have got some inkling of his customer's invention, and being a hard-headed, keen-sighted man, alive to every chance, he lost no time in introducing Gutenberg to his brother, Johann Fust, a wealthy, enterprising man. Like his brother, Johann Fust was not a man to hesitate long on the brink of an enterprise if he saw an advantage to be reaped. He and Gutenberg soon entered into a partnership on the usual terms—Fust to supply the money, Gutenberg the brains; the profits of the combined capital to be divided. Work was commenced, and before long a series of books were printed from wooden type and published under the style and title of Gutenberg and Fust.

But the battle was not yet won. The new work could not be called a success. The letterpress was anything but straight, the impression neither clear nor clean, and above all the cost was too great to allow of anything like a suitable return. Any ordinary man would have been discouraged and drawn back in dismay—as did Lawrence Kloster of Harlem, who a few years before had made similar experiments to those of our inventor, but had been deterred from prosecuting them by the enormous outlay attendant thereon. Not so Gutenberg. Each

defeat served but to brace him for another struggle. Still unwearied he set to work to remove the difficulty, and success soon crowned his efforts. It is said that as he was making an impression on wax with a seal-ring the idea occurred to him of casting his characters in metal, instead of carving them in wood. After revolving the matter in his mind he saw that several methods were open to him; matrices might be made in molten zinc or lead by dipping his wooden type into the metal as it cooled; or in clay by taking the impress of the type. It is not known which method the inventor adopted, but be that as it may, it was not very long before the invention was tested, and that on no small scale. Work was immediately commenced on a Bible, since known as the Forty-two Lined Bible, every page of which was set up with the cast type.

About this time a young man named Peter Schoeffer, a relation of Fust's, was taken into the printing office. His business was to correct the proofs and to illuminate the blank spaces left at the beginning of each chapter for the initial letter. Schoeffer was of an ambitious and aspiring nature, and no sooner was he acquainted with the secrets of the printing house than he set to work attempting further improvements. In this he was perfectly successful. He invented the steel matrix, in which a hard, durable type could be cast; and a type composition similar, in some respects, to the metal now in use. He also introduced some improvements in the composition and manufacture of printing ink. But he steadfastly refused to impart the secrets of his invention to his employers, demanding, as the price, a partnership in the firm and the hand of Fust's daughter in marriage. The conditions were, after some demur, agreed to, and the trio of printers set to work on their *Opus Magnum*, the 42 lined Bible.

The work went on rapidly, for all three had their hearts in their occupation. When the first page was set (can we fancy how slowly and laboriously these "new hands" picked up one clumsy letter after another!) the form was locked, placed under the little hand press, the working of which probably fell to Schoeffer's share, and the First Proof was "pulled." How the men must have clustered round that figured sheet of paper, no doubt full of blurs and errors—the work of unaccustomed hands. And how Gutenberg's heart must have throbbed with joy and pride and hope at the successful result of his years of toil, while his co-labourers looked in astonishment at the first fruits of this grand invention.

But alas for human triumphs. Gutenberg's soon passed away, and he again found himself penniless and dependent. Fust was a covetous, avaricious man. He saw immediately the immense wealth that might be acquired by the new invention, and determined to reserve all the profit for himself. It was easily done. He announced his intention of supplying no more money for the defrayal of expenses, and, further, brought an action against Gutenberg for the recovery of moneys already advanced. A verdict was given in his favour, the whole of the printing material was seized, and Gutenberg wandered forth, broken-hearted by this last cruel blow, to die untended and uncared for, after a weary life of suffering, toil, and shattered hope.

Fust and Schoeffer tried hard to keep their ill-gotten secret. A printing-house was started in Mainz in which workmen sworn to secrecy were employed. But all their precautions were in vain. The secret spread with incredible rapidity, and before the end of the century over a thousand printing-houses in Germany alone testified to the genius and energy of Johann zum Gutenberg.

THE DINNER TO LORD LISGAR.

Before the departure of His Excellency Lord Lisgar, our late Governor-General, the citizens of Montreal very appropriately invited him to a grand banquet in his honour. His Excellency promptly accepted the invitation, and the event came off on the evening of Thursday, the 20th of June, in the fine dining room of the St. Lawrence Hall, which was specially decorated for the occasion. The banquet itself was one of the finest ever given in the city, the arrangements having all been conducted under Mr. Hogan's own personal supervision.

His Excellency and suite drove up to the St. Lawrence Hall a little after eight o'clock, where he was received by a guard of honour from the Grand Trunk Artillery, accompanied by their band. Arrangements for the dinner being soon afterwards completed the company entered the room with their distinguished guest. In the absence of His Worship Mayor Coursol, who was then confined to his room by illness, the chair was occupied by Sir Hugh Allan; on his right were Lord Lisgar, Governor-General of the Dominion; Sir George E. Cartier, Sir Francis Hincks, Hon. P. Mitchell, Hon. S. L. Tilley, Hon. Dr. Tupper and Hon. L. H. Holton; on his left were Sir Hastings Doyle, Lieutenant-Governor of Nova Scotia; Hon. A. Wilmot, Lieutenant-Governor of New Brunswick; Hon. Mr. Dart, Consul-General of the United States; Hon. A. Campbell, Hon. J. H. Pope, Mr. Herbert, M. P., from England; Mr. Dorian, &c. The vice-chairs were occupied by Mr. Thos. Workman, M. P., Hon. Henry Starnes, and Mr. M. P. Ryan, M. P.

Among the gentlemen present were:—Hon. John Young, Sir A. T. Galt, Hon. John Hamilton, Messrs. Donald A. Smith, M. P., Manitoba; Hon. Nathan, M. P., from B. C.; Hon. P. J. O. Chauveau, Hon. A. B. Foster, Mr. C. J. Brydges, Mr. F. Cassidy, M. P. P., Mr. A. A. Stevenson, Mr. A. W. Ogilvy, Hon. Thos. Ryan, Mr. E. H. King, President of the Bank of Montreal; A. Allan, Ald. Bernard, J. B. Beaudry, L. Betournay, L. Beaubien, J. L. Beaudry, S. Bethune, Q. C., L. A. Boyer, J. F. D. Black, T. Cramp, Dr. G. W. Campbell, M. Cuivillier, H. Cotte, C. A. Chapleau, M. P. P., M. H. Cochrane, J. J. Daley, James Dakers, B. Devlin, G. A. Drummond, G. E. Desbarats, E. L. De Bellefeuille, C. Desnoyers, C. P. Davidson, E. S. Freer, A. B. Foster, Ald. David, J. G. Falkner, C. E. Glackmeyer, J. P. Sexton, F. W. Penton, F. B. Mathews, Chas. Garth, Daniel Munro, W. P. Bartley, H. C. Mullarkey, Colonel Harwood, A. Boyer, R. Mason, Henry Bulmer, Col. F. Bond, J. Crathern, McMaster, Shepherd, Carson, G. H. Dumesnil, R. Bellemare, R. Hubert, Lt.-Col. D'Orsonnens, P. A. Dorian, Hon. Mr. Girard, G. A. Drolet, R. Masson, M. P., J. Hedley, J. Hodgson, J. Hickson, J. Hurteau, J. M. Hatchets, E. Hudon, W. J. M. Jones, W. Kinloch, W. F. Kay, E. H. King, R. Kane, C. H. Leblanc, Q. C., Charles Lee, M. Laurent, John Mo son, G. M. Moss, G. A. Moreau, A. McGibbon, James McShane, W. Mitchell, L. Moore, A. W. Ogilvie, the Hon. G. Ouimet, E. G. Penny, T. P. Pominville, Sheriff Quesnel, Jackson Rae, R. J. Reekie, James Ross, T. W. Ritchie, Q. C., Donald Ross, Frank

* Some authorities make the date 1400.