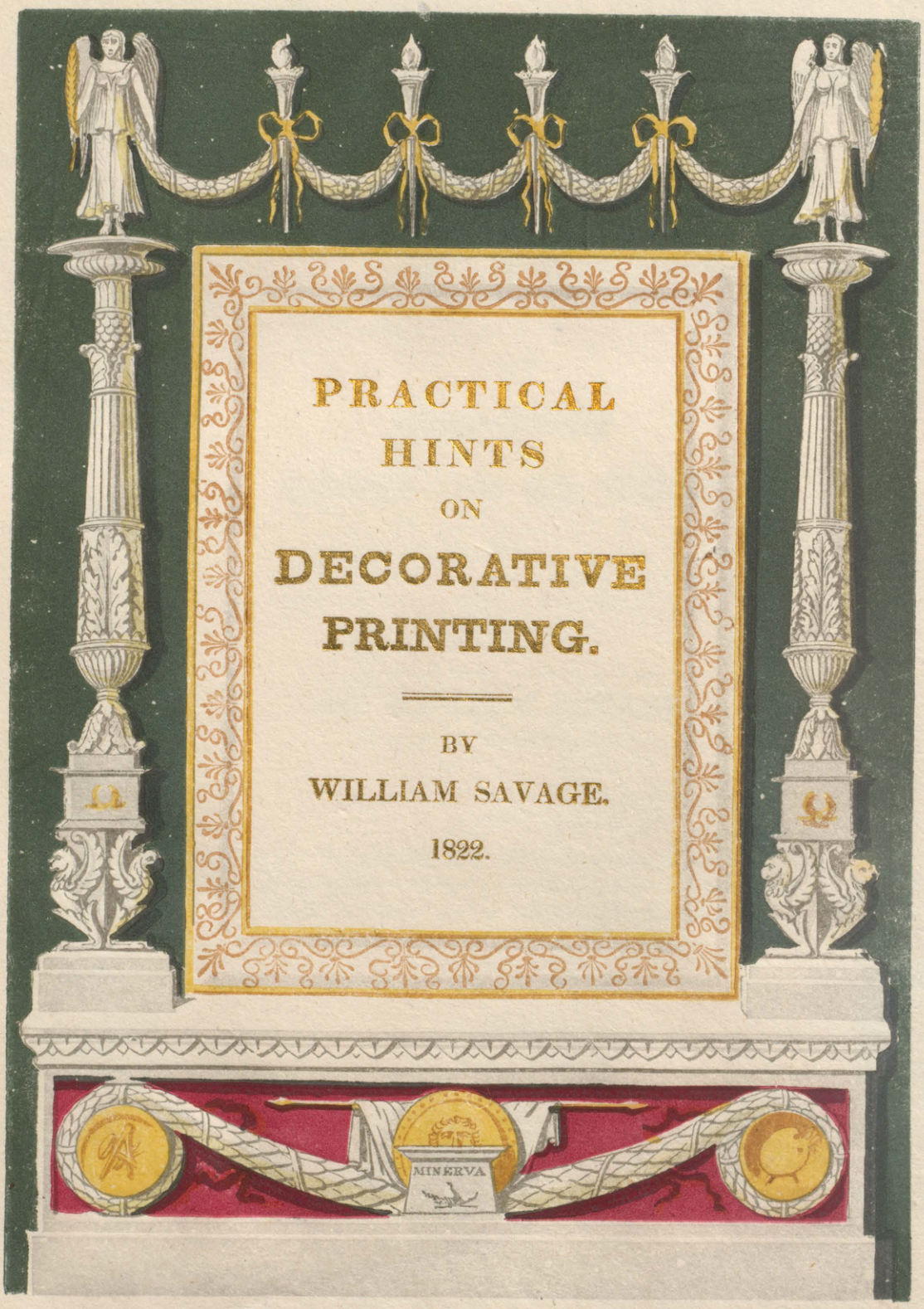

PRACTICAL HINTS ON DECORATIVE PRINTING.

BY

WILLIAM SAVAGE.

1822.

PRACTICAL HINTS

ON

DECORATIVE PRINTING,

WITH

Illustrations

ENGRAVED ON WOOD,

AND

PRINTED IN COLOURS AT THE TYPE PRESS.

BY WILLIAM SAVAGE.

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1822.

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ADDRESS.

It is with very great satisfaction, that the present Proprietor of the ensuing Volume on Decorative Printing, has brought this arduous undertaking to a close. He trusts that any apology for the long delay which has taken place since the publication of the First Part, will be considered superfluous, when it is recollected that he has had to contend with many difficulties, arising from the peculiarity of the press-work; as he was resolved that no effort should be left omitted, which might contribute to it's perfection, so far as was consistent with the original promises to the Subscribers. To learn that this has been effected, will be to him a source of considerable gratification: as it has been his chief endeavour to compensate the Public for the length of time which has been employed upon the Work, by the many beautiful additions with which he has enriched it; and to prove that by the change of it's Proprietor, it has not in any degree suffered deterioration.

London, March 25th, 1823.

TO

GEORGE JOHN, EARL SPENCER, K. G. F. R. S.

TRUST. BRIT. MUSEUM,
PRESIDENT OF THE ROYAL INSTITUTION OF GREAT BRITAIN,
&c. &c. &c.

THESE

Practical Hints on Decorative Printing

ARE, WITH HIS LORDSHIP'S PERMISSION,

HUMBLY DEDICATED

BY HIS MOST OBLIGED AND GRATEFUL SERVANT,

WILLIAM SAVAGE.

PREFACE.

In laying this long promised Volume before the Public my mind is relieved from a load of anxiety.

In this prefatory matter I have little to say respecting the plan or design of the work, as I have in different parts of the volume explained the objects of the publication. I would, however, premise that the title implies it is not a complete work: I durst not presume in the outset to think of making it complete; and during its progress, although I made great improvement in my own knowledge, I discovered that the utmost I knew was little, compared to what I believe the art is capable of performing; for new lights were continually arising, and if I had pursued them all, the publication would have been delayed to the end of my life.

It is, perhaps, the first attempt to diffuse a general knowledge of the improvements that have taken place in the art of printing. At the same time to extend the ornamental part, I have been obliged to make a number of experiments, which have opened a wide field to view; for hitherto I have been wandering on a road so long disused, that my path was scarcely discernible.

The result of all these experiments has stimulated me to prosecute them to a much greater extent; and it is more than probable that I shall continue to pursue the subject, particularly with regard to printing inks, in which there is so much room for improvement, during the remainder of my life: and if this first attempt to improve and extend my favourite art, be received favourably by the Public, I may, at some future time, publish, without reserve, the results of those experiments.

I am fully aware that the instructions for producing fine presswork will not give any additional information to our best printers; yet I believe that they will be serviceable to many; particularly to a number of printers in the country, and to those who have not had opportunities of executing fine works.

I have also to say a few words with regard to the subjects that I have selected to illustrate the process of printing in colours—the manner of engraving them—and the delay that has taken place in the publication.

When I commenced the work I found a difficulty in obtaining drawings. Many artists held that the process was not capable of giving even an imitation of a drawing; and they treated engraving on wood, in its most perfect state, as a very inferior department of the art; so that it became in many instances a personal favour to obtain drawings; and when I had obtained them, they were frequently not precisely those that I should have chosen; nor was the style in all cases exactly suited to the process.—I was thus cramped in the outset, and considerable time was lost.

With regard to the engravers—the manner of executing the designs was entirely new to them, and, in consequence, the progress was extremely slow; for in most instances great attention was necessary in analyzing the drawings, and in all cases great precision was required. The business too of engraving on wood during this time was brisk, so that my subjects were frequently laid aside, and the preference given to those that did not require much attention—this might be expected; but it delayed my work, and it added considerably to my anxiety. Under all these circumstances I trust that the Subscribers and the Public will look at the whole attempt with indulgence.

It was not my original intention to give any highly-finished engravings on wood; but, in consequence of printing the work myself, which I did not at first mean to do, I determined to sacrifice my profit as a printer, by throwing it into the book; and I resolved to give four subjects, by

four different engravers, to show what the art is capable of producing at the present day in England. Of these four I have only been able to give two, which I believe will be held to be the finest engravings on wood that were ever executed—one is engraved by Nesbit, and the other by Branston, from designs by the late J. Thurston, Esq.

Circumstances arose that prevented my having one from Mr. J. Thompson, and I sincerely regret the loss of his abilities. The melancholy illness of Mr. Clennell, is also a source of real regret to me, independent of the disappointment I experience in not having, as a specimen of the powers of his burin, the other subject, which it was intended he should engrave from a drawing by T. Stothard, Esq. R. A.

I was also anxious of including in my work one subject from the burin of the father of wood engraving in England—Mr. Thomas Bewick—but his numerous engagements, among which was his edition of Æsop's Fables, prevented him acceding to my wishes.

But I trust my Subscribers will think that these deficiencies in the execution of my intentions are counterbalanced by the introduction of two fac similes of original studies by A. W. Callcott, Esq. R. A. for two of his finest pictures, with which he obligingly favoured me.

I beg leave to return my thanks publicly to Earl Spencer, for the permission to make tracings from those curious and unique prints, the St. Christopher and the Annunciation, and from the Psalter of 1457, and for other favours I have had the honour to receive from this distinguished Nobleman.

To the Trustees, and also to the Officers, of the British Museum I offer my best acknowledgements, for the kind facilities that were given to me, in having drawings made from the Gallery of Sculpture of that splendid national establishment.

I have endeavoured to express myself in a plain, distinct manner, so that I may not be misunderstood: I have sometimes used technical terms, when they expressed the sense clearly; and I have rejected them,

when they would be ambiguous to the general reader: If I have succeeded I am satisfied—a practical man, writing on a practical subject, requires no additional aid from flowery words.

In the Spring of the year 1820, I disposed of my interest in the Work to a gentleman, well known in the literary world, who has resolved, in the most liberal manner, to make it as perfect as possible, at a great additional expense to himself, which he voluntarily incurred, that every promise, and even hint, which I had given to the public, should be fulfilled.

He has had completed and printed many subjects that I had determined not to give; and he has, at a considerable cost, added one subject, taken from Collins's "Ode on Mercy," painted expressly for the Work, by W. H. Brooke, Esq. which for the number of blocks, the combinations of colours and tints, and the difficulty of printing, surpasses, I believe, every previous attempt by the type press.

The letter-press Title and Preface, as well as the pages from 52 to the end, were printed by Mr. Johnson, Brook Street, Holborn; who also printed the ornamental Letter B, and the Head Pieces in the Appendix; all the other Decorations were printed either by myself or by my own family.

The Gold in the coloured Title, and that in the Letter B, was printed by Mr. William Blanchard, an ingenious young man, in the house of Messrs. Nichols and Son, Parliament Street.

W. SAVAGE.

July, 1822.

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CHAPTER I.

INTRODUCTORY SKETCH OF THE PROGRESS OF THE ART.

The increase and diffusion of knowledge, by means of Printing, which came into general practice about the middle of the fifteenth century, have been productive of the most important consequences to society at large.

The history of its origin is enveloped in mystery; and this art, which commemorates all other inventions; which hands down to posterity every important event; which immortalizes the actions of the great; and which, above all, extends and diffuses the Word of God to all mankind; this very art has left its own origin in obscurity, and has given employment to the studies and researches of the most learned men in Europe, to determine to whom the honour of the invention is due.

Without entering into the controversy, I may be allowed to observe, that I think the account given by Hadrian Junius, which is the popular opinion of the invention; and which has also been supported and defended by men of first rate abilities, is not the true origin of the art: and that neither Laurence Coster, John Faust, nor John Gutenberg, among whom the dispute rests, as to the priority, was the original inventor.

Junius " ascribes it to Laurentius the son of John (Ædituus, or Custos, of the cathedral at Harleim, at that time a respectable office), upon the testimony of Cornelius, sometime a servant to Laurentius, and afterwards bookbinder to the cathedral, an office which had before been performed by Franciscan fryars. His narrative was thus: ' That walking in a wood near the city (as the citizens of opulence use to do) he began at first to cut some letters upon the rind of a beech tree; which, for fancy's sake, being impressed on paper, he printed one or two lines, as a specimen for his grandchildren (the sons of his daughter) to follow. This having happily succeeded, he meditated greater things (as he was a man of ingenuity and judgement); and first of all, with his son-in-law Thomas Peter (who by the way left three sons, who all attained the consular dignity), invented a more glutinous writing ink, because he found the common ink sunk and spread; and then formed whole pages of wood, with letters cut upon them; of which sort I have seen some essays, in an anonymous work, printed only on one side, intituled, *Speculum nostræ salutis;* in which it is remarkable, that in the infancy of Printing (as nothing is complete at its first invention) the back sides of the pages were pasted together, that they might not by their nakedness betray their deformity. These beachen letters he afterwards changed for leaden ones, and these again for a mixture of tin and lead [*stanneas*], as a less flexible and more solid and durable substance. Of the remains of which types, when they were turned to waste metal, those old wine pots were cast, that are still preserved in the family-house, which looks into the market-place, inhabited afterwards by his great grandson Gerard Thomas, a gentleman of reputation, whom I mention for the honour of the family, and who died old a few years since. A new invention never fails to engage curiosity. And when a commodity never before seen excited purchasers, to the advantage of the inventor, the admiration of the art increased, dependents were enlarged, and workmen multiplied, the first calamitous incident. Among these was one John, whether, as we suspect, he had ominously the name of Faustus, unfaithful and unlucky to his master, or whether it was really a person of that name, I shall not

much inquire; being unwilling to molest the silent shades, who suffer from a consciousness of their past actions in this life. This man, bound by oath to keep the secret of Printing, when he thought he had learnt the art of joining the letters, the method of casting the types, and other things of that nature, taking the most convenient time that was possible, on Christmas eve, when all were customarily employed in lustral sacrifices, seizes the collection of types, and all the implements his master had got together, and, with one accomplice, marches off to Amsterdam, thence to Cologn, and at last settled at Mentz, as at an asylum of security, where he might go to work with the tools he had stolen. It is certain that in a year's time, viz. in 1442, the *Doctrinale* of Alexander Gallus, which was a Grammar much used at that time, together with the *Tracts* of Peter of Spain, came forth there, from the same types as Laurentius had made use of at Harleim.'"

When I look at accounts of the following early specimens of engraving on wood and printing, some of which are undoubtedly authentic, I cannot reconcile to my mind, that a subsequent performance should claim the merit of the discovery; nor that, after inscriptions and sentences, with engraved figures, and buildings, had, according to the opinions of the best judges, been printed with the press, and with black printing ink, years before the invention was claimed, at last it should be pretended to have been discovered by a person accidentally cutting the shape of letters in wood, and taking impressions from them with common writing ink, for the amusement of his grandchildren:—

1. Papillon's relation of the two Cunio, who engraved on wood the heroic actions of Alexander the Great, and printed impressions from them, in the year 1285.

This relation has been both ridiculed and abused; but the truth of it has been ably defended by Zani; by Mr. Ottley, who has entered largely into the subject in his History of Engraving; and by Mr. Singer, in his Researches into the History of Playing Cards.

2. The Print which is said to be in the library of the Academy at Lyons, with the date 1384.

3. The Print of St. Christopher carrying the infant Jesus across the Sea, with an inscription and date, 1423, at the bottom on the same block.

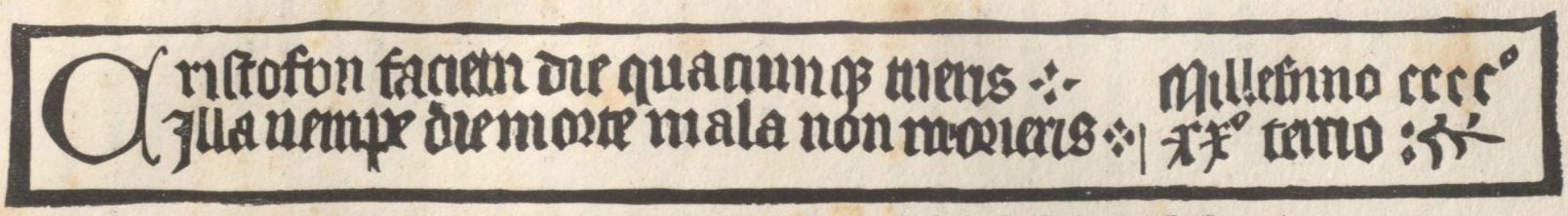
An impression of this now unique print is in the possession of Earl Spencer, by whose permission I have had a tracing made from the inscription and date, for the purpose of giving a fac simile of the engraving and printing of the earliest known specimen of these arts in Europe with a date.

4. The Print of the Annunciation, with an inscription on a scroll, which the angel holds in his hand.

This print is looked on by Mr. Ottley as being undoubtedly the production of the same Artist who engraved the St. Christopher. An impression of it is also in the possession of Earl Spencer; and the annexed representation was traced from the inscription, and is a correct copy of the original.

5. The Decree of the Government of Venice, of which the following is a translation.

" M CCCC XLI. October the 11th. Whereas the art and mystery of making cards and printed figures, which is used at Venice, has fallen to total decay; and this in consequence of the great quantity of playing cards, and coloured figures printed, which are made out of Venice; to which evil it is necessary to apply some remedy; in order that the said artists, who are a great many in family, may find encouragement, rather than foreigners. Let it be ordered and established, according to that which the said masters have supplicated, that, from this time in future, no work of the said art, that is printed or painted on cloth, or on paper, that is to say altar pieces (or images) and playing cards, and whatever other work of the said art is done with a brush and printed, shall be allowed to be brought or imported into this city, under pain of forfeiting the works so imported, and xxx. livres and xii. soldi; of which fine, one third shall go to the state, one third to the Signori Giustizieri Vecchi, to whom the affair is committed, and one third to the accuser. With this condition, however, that the artists, who make the said works in this



Fac-Simile of the Inscription on the unique Engraving on Wood of "St. Christopher."—See p. 4.

Fac-Simile of the Inscription on the ancient Engraving on Wood of "The Annunciation."—See p. 4.

city, may not expose the said works to sale in any other place but their own shops, under the pain aforesaid, except on the day of Wednesday at S. Paolo, and on Saturday at S. Marco, under the pain aforesaid."

This Decree proves that a trade in printing figures, as well as cards, was carried on at Venice to an extent sufficient to induce foreigners to endeavour to participate in the profits, and also to induce the government to interfere for its protection. Mr. Ottley observes, " The Italian writers argue, and I think fairly, that this decree is of itself good evidence of wood engraving having been practised at Venice, at least as early as the commencement of the fifteenth century. The time that must have elapsed, say they, from the first introduction of wood engraving into Venice, to its full establishment—when it furnished, perhaps, an article of beneficial commerce, and certainly afforded the means of subsistence to a very numerous body of artisans who practised it—cannot be computed at less than twenty or thirty years; nor can a shorter period be supposed to have elapsed from that epoch till the year 1441; when it is described to have fallen, as if gradually, into little less than a total decay."

I think these writers are within bounds in their supposition; but at all events, that decree will carry back the knowledge of engraving on wood and printing impressions from the blocks in Europe, into the fourteenth century; and this inference is independent of any reasoning of the invention having been previously introduced from China, where it is acknowledged to have been practised at least as early as the tenth century. It has been observed, that the Chinese process of obtaining impressions is different from the European; they using a roller, and we a press: to this I would reply, that the use of the hand roller in Europe is ancient, and is practised to this day by some engravers on wood, to obtain good proofs from their blocks.

If I might be allowed to hazard an opinion, without entering at length into the question, I should say, that the art had been exercised for many years secretly and anonymously, in printing religious subjects, with short sentences; and also playing cards; and that these were dis-

posed off as drawings and manuscripts; and that they were not suspected of being produced in any other manner: of course the artists were then, and still remain, unknown; and it was only when they began to extend the principle, by printing books, that the process became publicly known; for it could no longer be hid, on account of the number of copies produced of more extensive works.

The simplicity of the hand roller would also facilitate taking impressions in a private manner, as there would be no noise to excite curiosity; nor any cumbrous machinery to be concealed from public view, of which we find that Gutenberg was very jealous, lest it should be discovered. The hand roller, therefore, and the blocks of wood on which they undeniably first practised in Europe, afford strong presumption that the art was introduced from China, these materials being those of the Chinese to the present day, who are a people constantly noted for tenaciously adhering to their old customs. It is also probable, that the use of the hand roller first suggested the idea of the rolling press for taking impressions from engravings on metal.

It does not appear that any controversy arose about who were the inventors, till upwards of one hundred years after the knowledge of the art had become public; when the inhabitants of Harleim and Mentz respectively claimed the merit of the invention; the first for their townsman, Laurence Coster; the latter for their townsmen, John Faust and John Gutenberg; and the controversy has continued to this day, and probably will continue till it elicits the fact, that none of them invented the art, but that it only emerged from secrecy in their hands.

It is a curious fact, that under Faust and Gutenberg the process should be carried nearly to perfection; for some of the works they printed, both in the quality of the ink, and in the workmanship, are so excellent, that it would require all the skill of our best printers, even at the present day, to surpass them in all respects: and I do not hesitate to say, that in a few years after, the printers were actually superior to us in the use of red ink, both as to colour, and as to the inserting of a great number of single capital letters in their proper places in a sheet, with a

degree of accuracy, and sharpness of impression, that I have never seen equalled in modern workmanship.

In a few years the art began to retrograde, and continued in a very low state in England till early in the last century, when William Caslon commenced the business of a founder of types, and made great improvement in their shape; and his gothic or black letter remains unequalled. Looking at his improvement in black letter as an imitation of ancient writing, the purest shape for the character originally intended as a counterfeit manuscript, and which of course was not subject to fluctuation, I am sorry to see our present founders are giving way to a caprice of fashion, and are introducing an arbitrary shape, and additional letters, both of which were unknown to our ancestors.

About the year 1750 John Baskerville of Birmingham also made considerable improvements, both in his types and his workmanship. Since that time the art has been continually improving in Great Britain; and has been carried almost as high as it is capable of, by Bensley, Bulmer, Ballantyne, Corrall, Davison, M'Creery, Whittingham, and a few others.

Bodoni at Parma also improved the art very much in Italy; but of the productions of the present day, I think some, and particularly an edition of Horace, from the press of Didot at Paris stand unrivalled.

But all these exertions have only been to produce fine clear impressions from types and engravings on wood with black ink; and there has been no attempt made of late years to extend the art, so as to give additional decoration to our splendid books, by means of the type press.

At the close of the fifteenth and beginning of the sixteenth centuries, the engravers extended the art to the imitation of the pen and ink sketches of the great masters of painting; and this extension of the art took place much sooner than could reasonably be expected, according to the generally received opinion of the origin of printing.

The more this opinion is examined the more improbable it appears, that the first inventors of an art, in which it is so difficult to approach

perfection, should, momentarily as it were, arrive to such skill, with a confined practice, as to have, in the first instance, invented the art, and after that the mode of casting single types, of constructing a press, and making ink to print with, and to have taught workmen to produce specimens of such a superior quality, that, in endeavouring to surpass them, it has required the united abilities, of letter founders, of mechanics for the construction of presses, ink makers, and the most enlightened printers who have devoted their time and abilities to its improvement unceasingly, in a more enlightened age, for nearly seventy years, and the result is, that the utmost difficulty is found to equal their productions.

But according to this received account, they not only perfected the art, but afterwards extended it to a distinct purpose; that of imitating the drawings of the greatest masters of painting, in a manner which has been held superior to any subsequent attempts, and they must have accomplished all this in a shorter space of time than the exertions of modern printers, joined to previous knowledge, could do, even to restore the art to what it was within the first sixty years after it was invented.

The first attempts avowedly to imitate pen and ink drawings, by means of engraving on wood and printing, appear to have been made at the close of the fifteenth century. It is supposed that at first, only two blocks were used; one to give the outline and the shaded parts, and the other the coloured ground, out of which the lights were cut, to imitate their being put in with white; and this effect was produced when printed on white paper. In a very few years the process was carried further, so as to imitate drawings in chiaro oscuro, and with such success, as to induce some of the greatest artists to encourage it by their assistance, in drawing the subjects on the blocks.

These early productions were confined to three or four blocks, printed with different gradations of shade of the same colour, which produced the effect of what is termed chiaro oscuro: their general colours were dull ochry yellow, or brown; sometimes they used a gray ink, sometimes a reddish colour, dull blue, and purple; and they occasionally

varied the colour of one block, so that we meet with the same subject printed in a variety of ways, and producing different effects.

In many instances they did not engrave an outline, but produced their imitation of a drawing by gradations of tints, the termination of the tint becoming the termination of the subject; and the different depths produced the draperies and shaded parts.

In general the prints of the early engravers, that I have examined, have more the appearance of being coloured in distemper than of being washed in with water colours; and in large subjects, the ground is usually broken, the surface of the paper not being completely covered, as if they had been printed on dry paper; in other instances, they appear as if they had been printed in water colours on damp paper, which had caused the colours to run slightly into each other.

The abilities that were displayed in these early productions, numbers of them being drawn on the blocks by Titian, Raffaelle, Parmigiano, and other the most eminent masters, deservedly caused them to be held in high estimation; and it is reported that the Duke of Orleans, Regent of France, used to say, he saw nothing in prints that could give him the pleasure he received from those done in chiaro oscuro by Ugo da Carpi: and in the beginning of the eighteenth century a number of persons of the first quality, and curious in the art, made collections of drawings and sketches of the celebrated Italian painters and other artists who flourished in the sixteenth century, when prints in this manner, executed by Ugo da Carpi, were esteemed and ranked as drawings.

Whatever merit there might be in the drawing and engraving, the printing was comparatively much inferior to the productions of the press of Faust and Schoeffer: for there was no great difficulty in making the lights fall nearly where they were wanted; and from the boldness of execution, it was not of material consequence to have great nicety of workmanship.

It is difficult to ascertain to whom the invention of printing with a suite of blocks is to be attributed; it is possible that the first productions were sold as drawings, as the first printed books were sold as manuscripts;

if this were the case, it would account for so many being without either artist's name or date, till the manufactory became so extensive that it was impossible any longer to keep it a secret; and it would also account for the doubts and contradictions we meet with, whether particular artists engraved and printed in this manner; for it is probable that tradition has handed down to us facts, which, for want of historical evidence, become doubted, and involve us in perplexity to whom we are to attribute the commencement of the art.

Ugo da Carpi has been held to be the inventor, but this is disproved; and to give it to whom it is strictly due we must proceed on doubtful authority, on account of the early productions being mostly anonymous and without dates.

Michael Wolgemuth was born at Nuremberg in 1434, and practised as a painter and engraver; his works in the latter art, particularly in wood, are numerous. Huber mentions a cut by him printed in chiaro oscuro, which has not been contradicted to my knowledge. He furnished the designs and executed the engravings on wood for the Nuremberg Chronicle, printed in 1493. I find a subject engraved by him dated 1494, at which time he must have been sixty years of age.

— Mair, is said to have been a native of Landshut; his engravings have generally his name; some of them are dated 1499, and one 1506. The invention of engraving and printing in chiaro oscuro has also been attributed to him.

Girolomo Mocetto. Papillon says, that a print in chiaro oscuro, dated 1500, is attributed to this artist; but that the year and the name are not well formed, and are difficult to read.

Lucas Cranach was born in 1470 according to Mr. Ottley, in 1472 according to Bryan's Dictionary of Painters and Engravers. One of his prints in chiaro oscuro is dated 1507.

Baldassar Peruzzi, born in 1481, is said to have engraved in chiaro oscuro: Bryan, in his Dictionary, says he carried the art to great perfection; but Mr. Ottley observes, there is some reason to doubt whether he engraved at all.

Hans Burghmair, born in 1474. One of his prints in chiaro oscuro is dated 1508.

Ugo da Carpi, born about 1486, has been generally regarded as the first inventor of this species of engraving on wood. His print of Æneas carrying his father Anchises is dated MDXVIII. Mr. Ottley says, "he can hardly be supposed to have begun to engrave before 1510, and most probably did not engrave till after that period."

These are all the engravers in this way of whom I find any account, and who were born before Ugo da Carpi; and it appears clear that he could not be the inventor; except we can suppose that he invented it when he was a child, and taught it to those who were proficients in the art of engraving on wood, and who were also advanced in years; for when he was born Wolgemuth was about fifty two years old. I think the question will then lie between Wolgemuth and Mair; and I am inclined to allow the merit to the first; for although we have prints of Mair's dated 1499, yet I do not perceive that any of those were in chiaro oscuro: we have no date, it is true, to any of the same description by Wolgemuth, yet the last engraving of his that we have with a date is 1494, when he was sixty years of age, which is five years anterior to the other; and we can hardly suppose, at that age he was likely to engage in new inventions, when the ardour of youth was past, and he had spent the whole of his life in the exercise of an art, in which he had obtained celebrity: so that if Huber's appropriation to him of a print executed in chiaro oscuro be not disproved, I think there can be no hesitation in allowing the priority to him; if it be disproved, I think it would then belong to Mair.

It is now positively said, that Albert Durer never engraved in chiaro oscuro; and yet Papillon, who published his Treatise in 1766, actually mentions some engravings by him, and describes one, that were in the magnificent Collection of Prints in the Library of the King of France, to which he had regular access, and to which he constantly refers. Speaking of Albert Durer, in vol. i. p. 145, he says, "Il a aussi gravé de beaux camaïeux: j'en parlerai plus bas." "He has also engraved some

fine cameos: I shall speak of them hereafter." And at p. 391 of the same volume, he again speaks on the same subject; " Entre les Camaïeux gravés par Albert Durer, que l'on peut voir assi dans le Recueil 1023 du Cabinet des Estampes, l'on y trouve, page 76, un magnifique portrait d'Ulrichus Varnbuler ZC. M.D.XXII, grand comme nature, qui est un excellent morceau de ce Maître. Cette Estampe porte un pied de large sur seize pouces de haut." " Amongst the Cameos engraved by Albert Durer, which one may also see in the Collection, No. 1023 of the Cabinet of Prints, we there find, page 76, a magnificent portrait of Ulrichus Varnbuler ZC. M.D.XXII, as large as life, which is an excellent piece of this master. This Print is a foot broad, by sixteen inches high."

Papillon used the terms, chiar-oscuro, and camaïeu, synonymously; and meant by them prints executed with a number of blocks, as appears in various parts of his work when he is describing engravings.

Now although Papillon's work is allowed to contain an ample proportion of error; for " he wrote at a period when little had been done towards the investigation of the early history of engraving by other authors, and copied many of the mistakes of the French writers who preceded him, and, perhaps added some of his own; zealous, too, for the honour of his art, he was induced, upon very slight evidence, to insert, amongst the professors of wood engraving, many eminent designers who, it is probable, never handled a burin:" yet it is also allowed, that " he does not appear in the light of a person wholly incapable of judging of the merits, or of the school, or of the antiquity, of any work of wood engraving which might come under his cognizance. Indeed from his infancy he had begun to collect materials for illustrating the history of his favourite art, of which, as is well known, he became a professor of some eminence; having been instructed in it by his father, who was also an engraver on wood. This practical experience, combined with research, could not but give him great advantages, and render him the less liable to be deceived in his decisions." " His eye was habituated to very nice discrimination, touching all those particulars which, perhaps

more than any others that could be named, are guides to enable us to judge of the antiquity of wood engravings." These are the opinions of Mr. Ottley, a gentleman fully competent to give them, from the great research he has made among the different schools, and the study which he has given to the subject of engraving.

Heineken also, who was opposing the truth of the relation which Papillon had given of the two Cunio, bears testimony to the probity of the man, although he condemned his book; for he says, "Nevertheless, I am convinced that the author, whose character I am well acquainted with, believed all that he wrote, and erred only from ignorance."

The inference which I draw from these testimonies of the abilities, judgement, and probity, of Papillon is, that he was competent to judge of an engraving of Albert Durer's: and when he gives the subject, the date, and the dimensions; and also states that there were other prints in the same line, by the same artist, in the King's Collection, to which he gives a reference, it is more than probable if he had been mistaken in the statement, that he would have been corrected by other writers, who could easily have disproved his assertion, if it had been wrong: but when I consider that Papillon was himself an engraver on wood in chiaro oscuro, that he was educated in the art, and that he had been collecting materials from his infancy for the history of engraving on wood, I cannot suppose but what he was capable of judging correctly, and that Albert Durer did really engrave in chiaro oscuro.

If it be argued, that we do not at present possess any prints of his done in this manner with his mark on them, and on that account deny that he practised in this line; it might be answered, the same observation would apply to many ancient artists, of the reality of whose works there does not exist a doubt; but the testimony of a man who is acknowledged to have been "a competent witness," and "an honest writer," is sufficient proof of the fact.

Papillon had two prints in chiaro oscuro, which were believed to be by Raffaelle, but he does not mention the subjects; one of them was marked with an R. The Abbé de Marolles, in his Catalogue, states,

that Raffaelle engraved in chiaro oscuro a Flight into Egypt, in which the Virgin, who carries the infant Jesus, passes over a bridge in the guidance of St. Joseph, who holds the Ass by the bridle; but Papillon says he had seen the print in question, and could vouch that it was not an engraving, but a design of Pastol, heightened in the lighter tints with white, and which was certainly of great beauty. Upon the whole it is extremely doubtful that Raffaelle engraved in this way.

Domenico Beccafumi, born in 1484, was a sculptor and painter of great reputation, as well as an excellent engraver in wood; he executed many prints in chiaro oscuro.

John Ulric was a skilful engraver on wood in chiaro oscuro. Heineken conjectures that he lived before Ugo da Carpi, and prior to the commencement of the sixteenth century; but this is doubted; and from the style of composition, the drawing, and the execution of his prints, it is supposed to be more probable that he flourished about the middle of the sixteenth century.

Albert Altdorfer was born in 1488, and is said to have been a scholar of Albert Durer. He engraved both on copper and wood, and on the latter in chiaro oscuro.

Hans Baldung born in 1490, was a painter, and engraved only on wood. One of his prints in chiaro oscuro is dated 1510.

Lucas Jacobs Leyden, called Lucas Van, was born in 1494. He engraved on copper, and on wood in chiaro oscuro.

Francesco Mazzuoli, called Il Parmigiano, was born in 1503 or 1504. There are a number of wooden cuts from his designs, printed in chiaro oscuro, which have been said to have been executed by him; but it is ascertained that he only superintended the execution by others.

In the sixteenth century we find the following engravers practising this art: Antonio da Trento, who devoted himself to this particular line; Giovanni Nicolo Vicentino, called Rossigliani; Hubert Goltz, or Goltzius; Andrea Andreani; Henry Goltz, or Goltzius; Abraham Bloemaert; Paul Moreelze; Bartolomeo Coriolano; Giovanni Batista Coriolano; Christopher Jegher; George L'Allemand; and Frederick Bloemaert.

In the seventeenth century we have Louis Businck; Vincent le Sueur; Antonio Maria Zanetti; Nicholas le Sueur; Comte de Caylus; Edward Kirkhall; and John Baptist Michael Papillon.

In the eighteenth century the art was not much practised, at least there were few, if any, who studied it as a profession; and I only find the name of John Baptist Jackson; with the addition of John Skippe, Esq. who was an amateur.

It should be understood, that in classing these artists into centuries, I have taken the century in which I find an account that they were born; and that, consequently, in many instances they flourished in the following one. This list might be considerably extended, particularly in the sixteenth and seventeenth centuries.

In this transient sketch of the progress of the art of engraving and printing in chiaro oscuro, the first instance of an attempt to engrave on wood, and print by means of the type press, so as to represent a painting in water colours, appears to be by Jackson, who flourished from about 1720 to 1754. There is another by Gubitz, of Berlin, who is now living, who has produced some specimens, which I have seen, and which reflect great credit on him as an engraver and printer, but they do not interfere with the plan of the present publication.

I would wish to be understood as making a distinction between chiaro oscuro and a painting in water colours; by the latter expression I mean a representation of some object or objects in their proper or natural colours; so that when I observe there has been only two attempts to produce imitations of painting in water colours, it must be taken in this sense.

Jackson's last plan was to print paper hangings in colours with printing ink, which he thought would be as permanent, and bear cleaning as well, as paintings in oil. His first essay was at Venice in 1744, when he published six landscapes. All the prints in colours by Jackson, that I have seen, show a failure; for the oil which he used in the ink has stained not only the paper on which the subject is printed, but also the adjoining leaves when it has been inserted in a book; and the specimens in existence remain to show, that the use of oil in coloured printing inks

not only changes the colours, but also, by its separating from the colouring matter and spreading, disfigures the paper.

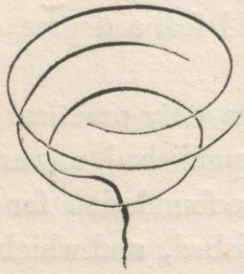
In the course of nearly four hundred years, since we have the first account of the origin of printing, it appears from all we can learn, that there have been only two attempts, besides this, to produce imitations of painting in water colours by means of this process, one of which failed from the style in which the prints were engraved, as well as from the materials used in the ink.

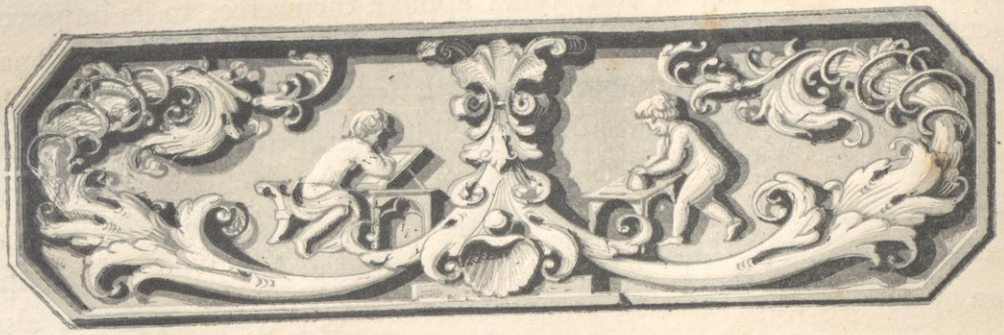
Since Mr. Skippe's death there has nothing been done in England in colours, with the exception of a few engravings in books printed with brown ink, and the lottery bills, some of which are very clever, and show both ingenuity and good workmanship; particularly when it is considered with what hurry they are executed; but in them there have only been used three colours, with the exception of black; viz. red, blue, and yellow, without any attempt to imitate a washy tint.

Upon the whole, the art of printing has been contracted to the mere process of producing books, and impressions from engravings on wood: and the imitation of drawings has been disused. From an examination of what had been done I had long felt that the powers of it might be extended considerably; and that the old practice of printing in chiaro oscuro might be restored, and the imitation of coloured drawings be attempted with success, so as to give fac similes of the productions of different masters, at a small expense, to serve as studies, or for the decoration of rooms, where, if framed and glazed, the eye should not be able to distinguish them from drawings. With these feelings the present work was projected, so far as relates to printing in colours. The attempt was difficult, and difficulties have attended every step in every possible way. My expectations have, however, been strengthened, that the art will ultimately, in more able hands than mine, be carried to a much higher state of perfection than I can ever flatter myself to arrive at in the pursuit.

It is more than probable that printing, by means of the type press, will not be stationary; nor is it likely again to retrograde; men of su-

perior abilities having of late years applied themselves to its improvement. The press which Earl Stanhope constructed gave additional means of producing fine impressions with less labour, and its principle has been applied with great advantage in the construction of numerous other presses; and the printing machine which was constructed by Mr. Koenig, under the auspices of Mr. Bensley, surpasses every thing that was thought practicable; I have been favoured with a detailed description of it, and have inserted it in the following pages. We have also great improvements in types, in ink, and in paper; and I have no doubt but that Printing, which has produced effects on the human mind surpassing those of any other art, will ultimately be the vehicle of civilizing the whole world, and of teaching men their relative duties to each other, by affording them the means of attaining the true knowledge of the ALMIGHTY, and of our BLESSED REDEEMER; and will, through the aid of ingenuity in design and colouring, be enabled to decorate its own productions with an elegance and splendour well suited to that art which bestows so many blessings upon mankind.





CHAPTER II.

ON PRINTING MATERIALS.

When I look at the perfection to which the art of Printing has arrived in the hands of a few, who have devoted their time and abilities to its improvement, I feel diffident of appearing before the public; but when I consider the very small number who have been able to approach perfection by their exertions, and who have, almost without exception, encouraged me to proceed, I feel a degree of boldness in my present undertaking.

When I see also that the only practical work on the art, Moxon's Mechanical Exercises, was published upwards of a hundred years ago, and that it has served as the foundation for all the Printers Grammars which have since been published, and which, in fact, are nearly copies of each other, without keeping pace with the improvements that have been made, I am sensible that there is a want of practical instruction, particularly in presswork.

It is not my intention in this work to enter into the details of composing—into the duty of the overseer—nor into the warehouse department.

As Presswork is a part on which the beauty of a book so much depends, and as I believe I am the only one who has endeavoured to give full directions to instruct a workman, I trust I shall have the indulgence of the reader, if I extend the article to a greater length than the apparent simplicity of the process may seem to require; it being my desire that no part should be doubtful or ambiguous.

It will be necessary in the first instance to endeavour to define what is meant by the term Fine Presswork; for, except this be understood, we shall come to no satisfactory conclusion, as workmen will vary in their opinions respecting it, and frequently produce sheets of different shades of colour in the same volume; and when the same person either actually prints the whole, or superintends it, the work will be executed according to his fancy, without any fixed rule of perfection; so that one workman may produce the finest work, according to his opinion, of a pale colour, while another, of a different opinion, will produce it so black, with superfluity of ink, that if it be not of a very good quality, the paper at the edges of the letters, nay, even the whole page, will be tinged with the oil, which separates from the ink, to the entire destruction of all beauty in printing.

Fine Presswork is the art of obtaining perfect impressions from the surface of engravings in relief.

By obtaining perfect impressions, I mean, that the subject transferred to paper, &c. shall be the impression of the surface only of the engraved lines, of such a tone as to produce all the effect that the subject is capable of, without either superfluity or deficiency of colour.

Having thus defined what I mean by Fine Presswork, I shall speak of the materials by means of which it is to be produced; and then give some practical directions, which may be of use to those who have not had opportunities of printing splendid books.

The materials of which I shall speak are—Types—Press—Balls—Ink—Paper.

Types.—The advantage of having a good press will be unavailing if the Types are much worn; for it will be found impossible to produce

a fine impression if they, or the engraving, have lost the sharpness of their lines.

If there be a roundness of the face, it will be necessary to use much blanket in the tympan, to bring up the shape of the whole letter or subject, which, after all, will produce an impression of more than the surface.

In the formation of letters or types for printing, at different periods, there has been a material variation in the proportionate thickness of the lines, and also in the shape. A meagre lean faced letter will never produce the beautiful effect that one of the same size will do, where the proportions harmonize with each other.

When the English founders began to vary the proportions of the lines, and the shape of the letter, for the purpose of improvement, they made the letter, generally, too slender, to show a full blackness when carefully printed. They afterwards increased the thick lines, so as to produce a showy effect; but it was found in practice that the small lines were too fine to be durable, as they broke down when printing, and in distributing; which occasioned great waste, great loss of time in changing the broken letters for good ones at press, and frequently destroyed the beauty of a page, by the letters failing during the process, and not being perceived by the workmen, in order to their being replaced. There was also another inconvenience arising from this failure of the fine lines; in many instances where a damaged letter was changed at press, it was replaced by a wrong one, or the right one put into a wrong place; thus causing an error, which no care of the master printer could prevent.

The next change, which took place about ten or twelve years ago, was to preserve the same thick line, and to make the fine line a little stronger: the beauty of the type was then increased, as the too great inequality in the proportionate thickness of the lines was got rid of, and the whole harmonized: and, in my opinion, gave the means of producing superior effect with types to any that had been cut before, or, probably, that have been cut since; and they were also more durable.

The founders have now introduced another change in the proportions

Modern Eighteen Lines Pica.

Canon, by the First William Caslon.

ABCDEFGabcdefg

Canon, Cut in 1796 *by Mrs. Caslon.*

ABCDEFGabcdefg

Canon, Modern.

ABCDEFGH

abcdefgh

Modern Alphabet Line Cuts.

12 pt.

Caslon Old Face Roman Caps.

ABCDEFGabcdefg

Caslon Old Face Italic Caps.

ABCDEFGabcdefg

Caslon Antique

ABCDEFGH
abcdefgh

DOUBLE PICA.

By the first William Caslon.

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrſtuvwxyz &

By Mrs. Caslon, in 1796.

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrſtuvwxyz &

Of the present day, fat faced.

ABCDEFGHIJKLMNOPQRSTUV
abcdefghijklmnopqrstuvwxyz&

Black, by the first William Caslon.

A B C D E F G H I K L M N O P
Q R S T U W x y Z
abcdefghijklmnopqrstuvwxyz
fiffifl

Black, of the present day with the additional Letters.

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

abcdefghijklmnopqrstuvwxyz
fiffifl&

of letters, and have gone to a barbarous extreme, from their first improvement. The rage is now which of them can produce a type in the shape of a letter, with the thickest lines, and with the least white in the interior parts.

I have, in the two annexed pages, given a few specimens of Types, cut since the founders of the present day began to turn their attention to the improvement of their shapes and proportions, contrasted with some cut by the first William Caslon; these specimens will explain my observations and opinions more clearly than words. They will also enable the reader to judge of the truth of the remark I made in the Introduction, respecting the gothic or black letter.

In explanation of the motive for adopting this extreme in the proportion of the lines, the founders say, that these Types were meant solely for printing hand bills and posting bills, for the purpose of giving a bold effect to particular words intended to strike the eye and attract the attention of the reader and the passenger in the streets; that they are more suitable for this purpose than the delicate formed letter; and that where they are introduced into bookwork, it is contrary to the original intention of the founders in casting them—and if bad taste is to be attributed to any one, it properly attaches to the printer, for applying them to purposes for which they were never designed.

William Caslon, the first improver of English types, was the means of making the English an exporting, instead of an importing, nation in this article; and these specimens are from the foundry of Messrs. Caslon and Catherwood, who are his successors; one of whom, Mr. Henry Caslon, is his great grandson. I think I am justified in saying, that no house in Europe has exerted itself more than this, in endeavouring to improve the shape of Types; and I believe, that where my criticism respecting the disproportion of the parts of letters, applies to them, it may be attributed to the bad taste of others, whom the founders are desirous of obliging; for they have founts of different sizes, the beautiful forms and harmonious proportions of which will prove their inherent good taste.

PRESS.—The Press ought to be in the best condition, otherwise there will be no certainty of the impression being equal, without great trouble and delay. The joints of the Tympan ought not to have any play; if they have, it will affect the register, which being out is unpleasant to the eye, and disfigures the appearance of the book: the most certain way to have them without play is to construct them on centres, so that if they should work a little loose, they can at any time be tightened, by means of the screws on which the centres are formed.

The Platen ought to be a true plane, and the face of it parallel with the Press Stone; and when any indentions are made in the face of the Platen, which in wooden ones are unavoidable, particularly when forms of small pages, or jobs, are worked, it should be planed to restore the evenness of the face.

I pass over putting up a Press, as it is the business of the carpenter; still it is useful for a pressman to be able to do it, but he will understand the method much better by seeing one fixed, than by any description: I will only observe, that a Press is never so firm as when the stays are placed at right angles with the Cap.

I would recommend, contrary to the general practice, that in wooden Presses the Winter should lie solid in the mortises of the Cheeks, and have no spring; and that all the spring should be in the Head, which would not affect the perpendicular descent of the Platen. This method of constructing a Press would be found advantageous in all cases; but more particularly in one-pull Presses, in which the Platens are large.

For it must be obvious, that where an uniform impression is meant to be obtained from types, by means of the perpendicular descent of a body with a plane surface, that this surface and the surface of the types should be parallel to each other; and that every variation from these parallels must affect the equality of the pressure.

It being a necessary consequence, that the surface of the types should be horizontal; it will be equally clear, that every departure from this horizontal line will destroy the parallelism of the two surfaces, and prevent an equal pressure on all their parts.

One part of the Carriage of a Press lies on the Winter, the other end resting on, and confined to, the Forestay, which is fixed to the floor, and cannot give way; the Coffin, in which is the Press Stone, lies on the Carriage; and on the Press Stone are placed the types. Now when great pressure is applied to the types, to produce an impression, it causes the Winter to give way, which immediately destroys the horizontal plane of the types and the parallel between them and the face of the Platen, and causes an unequal pressure, besides straining the cords of the Platen, the Platen itself, and all the parts connected with it, to the injury of the workmanship, and to the whole machine; all which would be avoided by the Winter being laid solid in the mortises of the Cheeks, and the Carriage and Ribs justified by a level. It would also be attended with another advantage—the Inner Tympan would not be so close to the Platen, consequently not so liable to slur in running in.

It is of service to saturate the surface of a new Press Stone, or Imposing Stone, if it be rough, with boiled linseed oil, which fills the pores, and makes the stone harder and smoother. Rubbing the surface with black lead is also of service with gritty stones.

Balls.—The Balls in general use are made of sheep's skins, with the hair taken off, dressed with lime, and dried: they are called Pelts.

When they are wanted for use they are steeped in urine to soften, then rubbed over a twisted iron to supple them, and to take out part of the moisture, which is termed currying; and afterwards trod under foot at the press side, by the pressman who is beating, to tread out the superfluous moisture; they are then scraped, to clean the surface, and made up into Balls, stuffed with combed wool, having a Lining made of a Pelt from an old Ball. This Lining keeps the outer skin moist, and makes the Ball firmer on the Stock.

The softer a Pelt is, so long as it is not surcharged with moisture, the better it will cover the surface of the type or engraving with ink: and it will also retain on its surface particles of dust, wool, or other extraneous matter, without parting with them to the letter or engraving; so that the work will be better and clearer of picks, than when the Pelt is drier and harder.

If Balls are wanted for common work, to be used with weak ink, they are generally made large, and not hard stuffed. In printing newspapers in London, when the numbers are extensive, and little time is afforded, large Balls are used, made soft, and the ink very weak, for the purpose of expedition; as they require little distributing, and they cover a large surface.

Balls for fine work are made smaller, and stuffed tighter with wool; which enables the pressman to distribute the strong ink that is used with more facility; and they cover the surface with ink better than if they were softer, and are easier for the workman; for large soft Balls, used with ink made very strong with varnish and colour, would be almost unmanageable.

In knocking up Balls, it is not necessary to tread the Pelts, as is usually done, and which is inconvenient when a man is working at half press: it will answer all the purpose if the Pelts be well curried, and, after the Balls are made, well scraped; which may be done by placing the Ball on the knees, and the handle against the stomach, to hold it firm; and taking a sharp table knife, holding the handle with one hand and the point with the other, scrape from the Stock over the edge of the Ball to the centre; by which operation the superfluous moisture will be got rid of, and the Ball will work equally well as those that have been trod by the pressman.

It is customary for pressmen to throw aside Pelts that are greasy, and not to use them till the last, in consequence of an opinion general among them, that they will not take ink: but, from an experiment I made at the Royal Institution, and repeated several times, I could not perceive the least difference between the most greasy Pelts, and those that were free from grease; the one taking ink, and retaining it on its surface, equally well as the other. Since then I have frequently mentioned the subject to some of the most experienced pressmen, who all allow that a greasy Pelt is more durable than one clear of grease.

A greasy Pelt requires more currying than one that is not greasy; and it is better to let it remain longer in the pelt pot, currying it occa-

sionally, which the pressmen term, giving it exercise. It is an advantage also to curry, occasionally, any Pelts that are in the pelt pot; as it improves their condition, and prevents them spoiling, so soon as they would otherwise do, by being in soak, when not immediately wanted.

In the country I have found it more convenient to get sheep's skins from the skinners, without any other preparation than having the wool taken off; and these were more durable, and made softer and better Balls, than when dressed and dried in the usual way.

There have been many attempts to supersede the use of urine, on account of its disagreeableness and smell: but no substitute, to my knowledge, has answered the purpose so well with Pelts.

Tanned sheep's skins, dressed with oil, have been used, to avoid smell, and for durability: they were more durable; but they were not calculated for producing fine impressions; not being soft, and, in consequence, not retaining dirt or other extraneous matter on their surface; which occasioned picks, and rendered them unsuitable for printing small letter with neatness.

There are Balls lately introduced, made of a composition, and fastened to canvass; and are sold ready for use. These Balls possess superior properties for fine work, particularly with small types and engravings on wood; producing clear and sharp impressions with less trouble than with pelts; they are also much more durable; and, as they do not require being kept damp with urine, the trouble of capping them, and scraping and cleaning, and the offensive smell, are avoided. They have been adopted by many of the best printers in the metropolis; and I have no doubt but they will supersede the use of pelts.

On the first introduction of these Balls there were two imperfections in them—they were too susceptible of moisture, and of heat—but the inventor has remedied the first, and has completely obviated any difficulty arising from the last, by having two pairs for each press; keeping one of the pairs in a cool dry closet; so that when the Balls that are working become too warm, which occasions softness, they may be exchanged for the pair that is at rest: by this method they may be al-

ways kept in the best condition; and it causes a saving, for they will last much longer than when one pair alone is used for each press.

Mr. B. Foster, the inventor, sends to each house he supplies with Balls, printed directions for their proper management; and, if the pressman intends to do justice to his work—to his employer—and to the Balls—I would strongly advise him to adhere strictly to these directions; for he will then find these Balls to be far superior to pelts; and will save himself much trouble and time.

These Balls will be found peculiarly convenient to small offices, where even one press is not in continued employment; for they may be kept for any length of time without injury to them; and if they be preserved in a proper temperament, will be always ready for use at the moment. If they should become a little too dry, they may be restored to a proper state for working in a few minutes.

It is usual to colour the composition black, blue, red, yellow, according to the ink that is meant to be used: but the result of my practice in coloured inks proves it is not necessary: for the Balls cannot be used uniformly with the same colouring matter, except a pair be kept for every tint, and that would be multiplying the number unnecessarily. In fact, I find that this colouring matter is an inconvenience; and I would not recommend its adoption; as they may be cleaned readily with a brush and water and pulling a few impressions afterwards on waste paper; or the ink may be taken completely off, with very little trouble, by wiping them with a cloth and spirits of turpentine—after being used with one colour, so as to fit them for another.

The numerous experiments I have been obliged to make, and the difficulties that have presented themselves during the progress of this work, which were necessary to be overcome, for the purpose of imitating drawings, have occupied my time and attention so much, that I have not been able to apply myself particularly to the composition for Balls; nor do I think it would have been an act of justice to Mr. Foster—for he as the inventor, has devoted his time and attention to the subject, and manufactures them for sale.

The whole of this volume has been printed with these Balls, both the letterpress and the specimens in colours; and from my practice with them I can fairly recommend them as a great improvement.

The present method of making Ball Stocks is superior to the old: they are now turned in one piece, instead of having the handles fitted into the bowls, which was the usual practice.

INK.—The subject on which I shall now treat is one of the utmost importance in printing splendid books, so far as relates to appearance; and of which I feel some timidity: for I come into more immediate contact with the few who have arrived at excellence; and whose superiority in the art arose primarily from their improvement of Printing Ink. This improvement caused a material change in its properties, from what had been previously in general use; and this change of properties in the Ink caused also a material alteration in the process of printing where it was used; for it was found not to be applicable to the common expeditious mode of working; requiring more care and attention than was before given to produce a good effect.

The advantages accruing from this improvement in Ink, combined with the skill and attention requisite, became exclusively confined to the few; for they naturally reserved the secret to themselves, and were thus enabled to outstrip all those who had not abilities or opportunity to pursue the subject with equal success: thus the execution of fine printing became a monopoly: for there was no market where Ink of superior quality could be purchased; and the great number of printers were obliged to go on in the old beaten track, using their utmost endeavours to make their work look well; but still obliged to acknowledge their great inferiority.

I was, fortunately for myself, appointed to the superintendance of the printing office at the Royal Institution of Great Britain, where I had many opportunities of making experiments, which improved my knowledge of the art, and stimulated me to further exertions when I became master of an enlarged office; and I have continued to pursue the subject with attention.

The properties which good black Printing Ink ought to possess, are, in my opinion, the following:—

Intenseness of colour.

Impalpableness.

Covering the surface perfectly of the type or engraving.

Quitting the surface of the type or engraving, when the paper is pressed on it.

Not smearing on the paper after it is printed.

Retaining its first appearance without any change.

We have no colouring matter of itself which will give that intense black now required in Printing Ink; we are therefore obliged to have recourse to other colours to mix with the black, to produce the desired effect.

The colours generally used to give this intenseness are Prussian Blue and Indigo; and the quantities of these articles must vary according to the quality of the black colouring matter, or to the fancy of the person directing the manufacture of the Ink; some preferring a dead black, some a brighter black, and others a black with a little bloom on it; and all these may be produced by varying the quantity of the Prussian Blue or Indigo.

However black the Ink may appear by itself, when prepared with black alone, it will invariably have a brownish appearance when compared with that which is prepared with the addition of blue; and some people prefer an Ink of this kind to that which is so intensely black, on account of its being milder and pleasanter to the eye.

Ink ought to be reduced to an impalpable smoothness, either in a mill, or on a stone with a mullar; and this is essentially necessary, as the process gives it the next quality—of completely covering the surface of the type, or the lines of the engraving; and, with proper care in printing, presents to the eye an impression, in which the edges of the lines are smooth and perfect, and the surface of the paper is completely covered with Ink; which, when it is of the best quality, constitute the perfection of printing with types.

Another property required in Ink is, not only that it shall perfectly cover the surface of the lines to be printed, but that it shall also quit the face of the type or engraving, and leave it quite clean when the paper is impressed on it, and attach itself to the paper, so as to give a perfect impression of the subject to be represented, without the colour of the paper appearing through the Ink; and that this property, of quitting the type, &c. and becoming attached to the paper, shall continue the same through any number of impressions, without any accumulation of Ink on the surface of the type, or engraving.

After having obtained these properties, and the printing is as perfect as it can be made by workmanship, still something more is requisite to preserve the beauty of the work—viz. that the Ink shall not smear on being slightly rubbed; and that it shall retain its colour and appearance, without any spreading at the edges, or tinging the paper—in short, that it shall continue unchanged for any length of time.

The whole of these properties has never been obtained in Ink where oil only has been used for the varnish, at least not to my knowledge; its property of spreading in the substance of the paper, remains unchanged, although it may be checked; but there is no certainty of it when the Ink is purchased; and after having bestowed a great deal of care and skill in the workmanship, it is mortifying to find, on opening a book twelve months after it has been printed, that all the beauty of its appearance has vanished, and that the fine paper on which it was printed is discoloured, by the separation of the oil from the colouring matter.

I felt for a long time this ill effect of using oil in the composition of Printing Ink, and endeavoured to discard it as an ingredient; but the great difficulty arose in finding a substitute with superior properties. In this research I had nothing to guide me; all our fine Inks having the common Inks of commerce for their basis; and improved by the addition of varnishes, to give them strength and prevent their spreading—and colour, to give them intensity, and then ground to an impalpable fineness. I followed this plan myself for some time, when I at length resolved to discard the oil entirely—and I succeeded.

The advantages arising from the omission of oil are of consequence in different points of view: in the first instance it takes away all risk in the preparation by boiling, which is at all times an operation of danger —the Ink is materially improved—and it also enables every master printer to manufacture his own Ink, with a certainty of having it at all times of the same quality, with no more trouble or care than is required to prepare colours for painting; or, if it should not be wanted of extreme fineness, with no other trouble than mixing the ingredients together, according to the usual practice of mixing the ingredients of common Printing Ink.

With respect to the quality of the Ink without oil in its composition, the public will judge: the Inks with which this volume is printed, both black and coloured, being made according to the receipt given in the Appendix, with some slight variation in the proportions, for different colours; the knowledge of which can only be obtained by practice and observation: for the same colour prepared by different persons will require different proportions.

This is the only receipt that has been offered to the public from which Printing Ink can be made with certainty of the same quality; for the Varnish in general use is invariably made of boiled linseed oil; and it is well known that different degrees of boiling will produce different effects in the result, and there is no nice test for the proper degree; but it is left to the judgement of the individual who superintends it, who has only general rules to guide him, and who in consequence will sometimes boil it more than he will at other times, so as to produce a material variation in the quality, which must ultimately affect the Ink.

The method of making the Ink, and the Ink itself, are now before the public, and the latter must stand the ordeal of time: if it remains unchanged, as I believe it will, the master printer may easily and uniformly make it of the same quality, without any danger or any great trouble: and I trust it will prove an advantage as well as a convenience: for I recollect the time well, when I should have felt this information to have been of essential benefit to my pursuits as a printer.

PAPER.—The quality of Paper is of great consequence in fine printing; but it is too frequently overlooked by all parties.

Every pressman of common attention perceives a material difference in the process of bringing off a sharp impression, according to the quality of the Paper that he uses. When he meets with a hard sized harsh Paper, it requires more than common care to make his work look well—to make it good, it frequently defies his utmost abilities.

The best Paper for receiving an impression from types or an engraving, is India Paper, which comes from China; that which comes as the linings of tea chests is equal in quality to any, but many object to the colour; a thicker and whiter sort comes as wrappers for silk; both these are always injured by being used as packages; but out of them good pieces may be selected for proofs, or sufficiently large for octavo pages, and frequently for quarto. A perfect Paper of large sized sheets is imported direct, in chests of two thousand sheets.

It is the opinion of many that India Paper is made from silk; but this opinion is erroneous, and may easily be disproved by a simple test—it is well known that animal matter, when exposed to a strong heat, burns to a cinder; and that vegetable matter, under similar circumstances, burns to ashes, and this is invariably the case with India Paper. It has also been frequently said, that it is made from the Bamboo.

As the quality of India Paper is so decidedly superiour to any other for printing, it would be very desireable that some of our residents in China, or those who occasionally visit that country, and have opportunities of seeing the manufactures, would endeavour to ascertain the materials used, and the method of making the Paper; which might be the means of improving the quality of our Printing Paper, and of enabling us to produce more splendid books with less trouble; and of ultimately attaining excellence.

The next best Paper for printing, is French Plate Paper; after that, English Plate Paper; and the worst of all, is our hard sized Paper, made of common materials, and bleached with acid, to make it look white, but which destroys its texture.

This order must be understood as relating to Paper applicable to impressions from types, because fine engravings on wood require a thinner Paper than Plate Paper, of a soft silky quality, of which there is none to be compared with the India Paper, as it possesses every requisite that can be wished for in printing.

Paper manufactured from cotton occasions inconvenience in working; particularly when strong ink is used; for the filaments of the cotton adhere partially to the type, are taken up by the balls, and accumulate on their surface, to such an extent, as to occasion picks; and often readhere to the type, so as to be taken up once more by the Paper, with the addition of a coating of ink, which produces a disagreeable effect on the eye; and, where it happens to fall, destroys the sharpness and clearness of the impression.

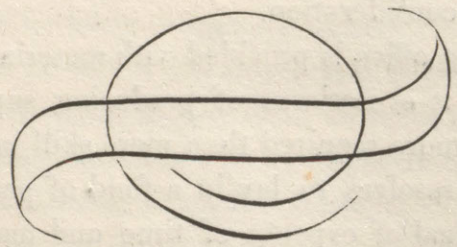
The thick Plate Papers, although they take a good impression from types, have properties that render them not eligible for printing fine engravings on wood, which are cut in relief, and require to have the impression from the surface alone of the lines. This Paper, owing to its thickness and softness, is by the process pressed into the interstices between the lines, which produces an impression of more than the surface, and, of course, of more than is wanted to appear: the skill of the artist is thus rendered of little avail; and the delicacy and tone of the engraving are destroyed.

To obviate this evil in some degree, when thick Plate Paper is used, I would advise that it should be slightly wetted; in fact as slightly as it is possible to produce a good impression: or, if the form or wood cut be small, it may be used dry. In the latter case, if the press has sufficient power, the impression will be much sharper, and the lines finer, than if the Paper were wetted.

It is probable that an analysis of different Papers of the best quality, so far as the component parts can be ascertained by a chemical process, may be of service to the paper maker in endeavouring to approximate to the quality of India Paper; I have on that account obtained from the Laboratory of the Royal Institution an analysis of India Paper and

French Plate Paper, made by Mr. Faraday, which is contained in the Appendix; and I hope it may give a hint to some of our manufacturers, so as to lead to improvement in the quality of English Paper used for printing.

I have, however, to regret that I have not been able to gain much information in regard to the material and manufacture of different kinds of Paper. More knowledge on this subject might tend to produce a Paper of our own, equal to India, and thereby secure to us the advantage of exportation; an advantage of some importance, even when weighed with all the other interests of this nation.



DECORATIVE PRINTING.

CHAPTER III.

ON PRESSWORK.

In aiming at excellence in printing, it will be found that Presswork deserves particular consideration.

When a printing office is provided with materials of the best quality, and the master of it is desirous of producing superiour workmanship, there is something more required than mere skill in the mechanical part —for, without he resolves to lay in a fund of patience, as well as to submit to a great deal of expense of time and materials, he will never excel.

A good pressman ought, as a matter of course, to be well acquainted with the whole of the usual routine of presswork; in addition to which, to form his judgement, he should make himself acquainted with the most splendid books, and study them as patterns to workmanship. He ought also to examine the finest engravings on wood, and study the effect which the artist meant to produce. The proofs printed by the engraver, or under his superintendance, will be the best specimens: but the pressman's most valuable lesson will be when he can obtain the assistance of the artist at the press side, to direct him in making ready the cut; and

I would advise him by no means to be impatient at the tediousness of the operation, as he will obtain more information how to produce a fine impression by this, than by any other means: it will also instruct him how to meet the wishes of the draftsman and the engraver with regard to effect in a way superiour to any other; and will, with care and attention, ultimately lead him to excellence in printing engravings on wood.

Wetting Paper.—Paper, to be in good condition for printing, should have the water equally diffused through every part of it, without being saturated so much as to squeeze out when under the platen, which would prevent the ink adhering to the paper; but it should have sufficient to make it feel soft and pliant, and to receive the ink kindly on its surface; which sized paper will not do without moisture; nor any so well as India paper, which receives a fine impression of a moderate size, without being wet.

Papers of different qualities require different degrees of wetting: hard sized paper requiring more water, consequently more dippings in a quire than paper that is not so much sized; and it also requires to lay a longer time, and to be more frequently turned.

Paper requires to be wet a few days, and it is better to be turned two or three times; by which means fresh surfaces are exposed to each other, and the moisture becomes equally diffused through every part; and makes it, what is termed, in good condition.

Some thick plate paper, that has little or no size in it, requires particular attention in wetting; for it imbibes a great quantity of water without becoming in good condition; but if it have too much, the water will squeeze out in printing, and prevent the paper taking the ink uniformly, so as to spoil the impression. I am inclined to think, that this effect is owing to gypsum used in the manufacture of this paper, to enable it to receive a fine impression, which causes it to take up the water rapidly, and crystallizes it, and thus renders the paper almost unmanageable.

Practice, and attention to the qualities of paper, only, can teach a person how much water each kind will require; and I prefer letting the

pressmen wet it, as being more likely to give each quality the proper quantity of water, than a person who does not attend to the presswork.

In printing jobs, when paper is wanted in a short time after it has been wetted, it may be put into a press, and squeezed down, which will bring it to such a state of equal moisture, as to fit it for printing in a moderate way in a short time.

When paper is too wet, either by the water standing on the surface, owing to its being hard sized; or too much saturated with water—interleaving it with unsized dry paper will remedy the evil sooner, perhaps, than any other method.

Making Ready.—Making ready is a technical term, implying the process of laying the form on the press—fixing it in its place—placing the tympan sheet on the tympan—placing the points to make register, when both sides of the paper are to be printed—making register, which is causing the pages and the lines to fall exactly on the back of each other—preparing the frisket—and producing an equal impression from all the pages, and from every part of each page.

When an engraving on wood is printed, it also denotes the overlaying it, so as to produce an impression, which shall possess all the effect that the subject will admit of.

In all common work, where despatch is required, thick blankets are used in the tympans; and when the types are much worn they are necessary, as the lines that are rounded by wear would not otherwise appear. But it is too common, even in good work, for the pressman to put too much blanket into the tympans, in order to lessen the pull for the purpose of easing his arm, and to enable him to be more expeditious: the consequence is, that the impression will show more than the surface of the types or engraving; and thus what is gained by the pressman in ease and expedition, is more than counterbalanced by the imperfect rough impression that is produced.

It must be evident, that when a clear sharp impression is wanted, that the pressure should be on the surface only, without penetrating into the interstices; of course, the tympan ought not to be very soft, neither

should any blanket be used: the most perfect impression will be obtained, from new types or engravings in relief, when fine thick paper alone is used in the tympans; and even of this article I would not recommend many thicknesses.

The press stone and the platen ought to be perfect planes; and the platen should be so hung, that the surface of each should be parallel to the other. It will be found in practice that an iron platen is superiour to a wooden one, for producing a sharp clear impression, where fine work is wanted; for, by discarding woollen blankets, the pressure must be increased to obtain good impressions, which indents wood, and then requires so many overlays to make an uniform impression, that they produce nearly the same effect as blankets, and it becomes necessary to new face the surface frequently, which is attended with expense and loss of time. The iron platen, from its nature, is not subject to this inconvenience; but it is more liable to injure the types, as, from its superiour hardness, it will not yield; and should there be any inequality on the surface of the form, owing to it not being well planed down, or any extraneous matter by accident on it, the types, &c. must give way, and be destroyed. This effect will also be produced in jobs occasionally, when the pull is too hard; and, generally speaking, it wears the types more rapidly than a wooden platen.

After an impression is printed, the pressman examines if it be uniform throughout: if it be, which is very rarely the case, he goes on with the work; if not, he proceeds to overlay, in order to produce regularity of colour and pressure over the whole form.

To effect this object, he takes thin smooth paper, and wherever the impression is weak he pastes a bit of it, the size and shape of the imperfect part, on the tympan sheet, and proceeds in the same manner with every part that is imperfect; he then pulls another impression, to examine the effect of his overlays, and continues to add to them where wanted, till the pressure of the platen is the same in every part, and the impression is uniformly of one shade of colour.

It is preferrable to overlay, generally, on a sheet of stout smooth

paper inside the tympan; and particularly where the same press does great part of a volume. This sheet is made to fit the interior of the tympan, and has overlays pasted on it where wanted, to bring up the impression till it is very nearly equal; in all succeeding sheets it saves the pressman a great deal of time, as he will be certain that his first sheet will be nearly right; and he will only have to place thin overlays on occasional parts, to make the impression perfect, with very little trouble. On the same principle, where this method is not adopted, preserving and using the first tympan sheet with its overlays, will be more expeditious than having to repeat the operation with every form.

These observations refer to types; for when an engraving is to be printed, neither the pressure nor the impression ought to be uniformly equal; if they be, the effect that is intended to be produced by the artist will fail; and instead of light, middle tint, and shade, an impression will be produced that possesses none of them in perfection; some parts being too hard and black, and other parts neither pressure nor colour enough, with obscurity and roughness; and without any of the mildness of the middle tint, which ought to pervade great part of an engraving, and on which the eye reposes after viewing the strong lights and the deep shades.

To produce the desired effect with engravings great nicety and patience are necessary in the pressman; for a single thickness of thin India paper is frequently required over very small parts, and the edges of it even pared down, where the engraving is fine: and I would advise that the overlay should never be cut at the edges; but, even where great delicacy of shape is not required, that it should be torn into the shape wanted, which reduces the edges, and makes the additional pressure blend with the surrounding parts.

In particular parts the impression will sometimes come up too full; it will then be necessary to add an additional tympan sheet, and cut those parts away from it, scraping the edges which come too hard: and scraping away half the thickness of a tympan sheet, in small parts that require to be a little lightened, will improve the impression.

Engravings that are in the vignette form require great care to keep the edges light and clear; and in general it is necessary to scrape away one or two thicknesses of paper, in order to lighten the impression and keep it clean; for the edges being irregular, and parts, such as small branches of trees, leaves, &c. straggling, for the purpose of giving freedom to the design, are subject to come too hard, and are liable to picks, which give great trouble to pressmen, and are difficult to be kept clear of, particularly with a wooden platen, which from wear has become uneven. In these cases high bearers, placed round the block, will be found advantageous, for the purpose of equallizing the pressure on the surface of the engraving; and they also protect the edges from the severity of the pull, which is always injurious to the delicacy of the external lines.

When great nicety of impression is required in a vignette, it will be found beneficial after the engraving is beat with ink, to take a small ball without ink, and beat the extremities lightly: this will not only take away any superfluity of ink, but will be the means of preventing picks, and give to the edges lightness and delicacy; particularly where distances are represented.

The pressman will find it an advantage, if it be necessary to do full justice to an engraving, to have a good impression from the engraver, and place it before him as a pattern; and then arrange the overlays and tympan sheets, till he produces a fac simile in effect. But, as I observed before, his best lesson will be when he can obtain the assistance of the artist at the press side, as by that means he will obtain more instruction of what is required than by any other method.

The light parts of a fine engraving require little pressure; but the depths should be overlaid, so as to produce a full and firm impression.

If a block be hollow on the surface, underlaying the hollow part will bring it up better than overlaying it. And if a block be too low, it is adviseable to underlay it, for the purpose of making it the proper height, in preference to making use of overlays; for they act in some measure as blankets, producing the lines thicker than the engraving, by being pressed into the interstices.

MARGIN.—Making Margin between the pages is not a part of the pressman's duty; but it behoves him to notice it in the first form, for the purpose of making register when he works the reiteration. He has to look after the Margin at the edges of the sheet, that it is equal all round; and in folio works he is to follow directions respecting the Margin at the head, and, when that is determined, to cut a gage for his guidance in the following sheets, that the running titles or head lines may range with each other when the book is bound, without having to reduce the size of the paper; or to leave it uneven at the head, on account of any inequality of the Margin that might occur from the want of this precaution.

REGISTER.—There has been great improvement of late years in making Register, so far as respects the lines of one page backing the lines of the page on the reverse of the leaf; and this has arisen from substituting cast leads in lieu of milled leads, which were formerly in general use, and became after a length of time unequal in thickness, which prevented line falling upon line; and from a greater degree of care now used in dividing the whites that occur in a page.

However accurate the founders are, yet when they have to cast additional leads, they sometimes vary in a slight degree, but sufficient to make a perceptible difference in the length of a page; this difference can only be remedied at the press, which is sometimes done, where great nicety of workmanship is required, by putting slips of paper between those lines where the space is deficient.

Where the page and the letter are large, and there is much white between the lines, and the matter divided into parts with space between them, then the compositor ought to be careful in making up his pages, that the whites correspond exactly to lines; so that, whatever whites intervene, the lines shall still back each other: and he will find that a gage on which each line is marked will be a great convenience, and save much trouble when the form goes to press. It is also desirable that he should, in all cases, keep a gage of the margin, in order to ascertain that every sheet is right before it be printed off. This is too much neglected; but if it were always done, it would be the means of keeping the margins of

books uniform, and save a great deal of trouble to the pressmen, who have frequently to unlock the forms, and take out, or add, scaleboards; and sometimes even to change parts of the furniture, owing to the carelessness of the compositor, who too often is negligent whether he puts a scaleboard more or less at the sides of the crosses, or whether the chase is put the same way on the succeeding sheet that it was on the preceding one; and sometimes even transposes the chases from different sheets. These departures from regularity cause variations in the margin and the Register, that are offensive to the eye, and which the pressmen have to rectify; but which too frequently they do in a careless manner.

It still, however, is his duty to examine whether the pages back each other exactly; and, if they do not, to alter the margin till they do: and this is done by taking away, or adding, scaleboards at the head or back, as the occasion may require.

Taking Ink, and Beating.—In proceeding with the work the balls ought to be well cleaned, that no dirt or extraneous matter be on their surface. They should not be too moist, which would prevent the ink distributing equally on them, and would also prevent it laying equally on the surface of the types or engraving; nor should they be too dry, as in that case they do not dispose of the ink so smoothly as to produce a fine impression; neither do they retain particles of dirt on their surface, but part with them, which cause picks. The moisture ought to be just so much as to make the pelt or composition soft, when the ink will distribute kindly and equally, which will be perceived by their lugging; they will also part with it to the type, &c. equally on every part where they touch, so that the impression will be sharp and clear.

The ink ought to be rubbed out thin and regular on the ink block, so that in taking ink it shall at the first be diffused tolerably smooth on the surface of the balls, which gives more probability of producing good impressions. It is adviseable to keep rubbing the ink out on the block with the brayer, as also to be almost constantly distributing the balls; by so doing, the friction produces a small degree of warmth, which is of advantage, particularly in cold weather.

As uniformity of colour is requisite for beauty in printing, I would recommend that the pressman should take ink for every impression where the form is large; this I am aware will be thought too troublesome, but I am decidedly of opinion that it is advantageous in producing regularity of colour: for it is unpleasant to the eye to see in a splendid book two pages facing each other, the one of a full black, rather surcharged with ink, the other rather deficient in quantity, and of a grey colour: and this must happen, when, as is frequently the case, three or four sheets are printed with one taking of ink.

Beating for fine work should not by any means be slighted. The form ought to be gone over carefully two or three times; not quickly, nor with heavy thumps, but slowly and regularly, just raising the balls each time completely clear of the types, and advancing but a little way, so that in fact each part will be beat five or six times over; the face of the type will then be completely covered with ink. But the pressman should be careful not to beat too far over the edges of the pages, nor, if the margin be wide, let the balls scrape against the edges of the opposite pages; as in both cases ink or extraneous matter will be scraped from the balls, and accumulate about the types at the extremities, and cause picks and rough lines.

Pulling.—In Pulling, the head of the press should not be justified for a short quick pull, which does not answer for a fine impression; and can only suit where despatch is necessary: but it ought to be so justified as to produce what is called a soaking pull; that is, the form should begin to feel the pressure of the platen when about two thirds down; then, when the bar is pulled home, or, what is technically termed, cheeked, which I would always recommend in good work, as it keeps the pull regular, the power slowly increases, and the paper has time to be pressed gradually on the types, which causes it to receive the ink on all its parts, and produces a clear impression.

This justifying the head relates to wooden presses, where the head and the winter are allowed some play, which is filled up with cards: these cards are pieces of scaleboard cut to the size of the mortises in the

cheeks, and inserted in them upon the tenons of the head, and also under the winter, allowing the pull to have some elasticity.

When scaleboard cannot be had, pieces of felt hat may be used, which answer the purpose, and preserve their elasticity better than fine beaver hats.

In iron presses, on the late Earl Stanhope's principle, where increased power is produced by means of a compound lever applied to the screw, and where there is no elasticity in the pull, this effect is produced in a greater degree than in a press of the common construction; for, as the platen descends on the form, the power increases considerably, but the motion decreases; so that the effect of the soaking pull is preserved, with a considerable addition of power, owing to the combined action of the screw and the compound lever.

It being neither customary nor advisable to fly the frisket in the best work, there ought therefore to be a button screwed on the off side of the tympan, to confine the frisket flat to the tympan; it keeps the paper in its place, assists it in rising from the face of the form, to which it adheres, owing to the strength of the ink, and prevents slurring. It also prevents the paper slipping, which occasions waste when it happens; and altogether the button is of consequence in preventing accidents in the impression, and producing good workmanship.

Where short pages occur in a form, the feet of them, and the edges of the surrounding pages, will print hard; it is therefore necessary to have bearers to protect them, which are generally double pica reglet, pasted on the frisket, so as to bear on some part of the furniture or chase; but bearers made the height of types are better, when they can be placed where the balls do not touch them when beating, in such a case they are liable to tear the frisket. They may be placed where the regular foot of the page would have been, had the page been full, so as to prevent those hard edges which would otherwise occur. And this principle will hold good in all cases of short pages, blank pages, and the edges of wood cuts; but where it happens that some of the edges, or a particular page of a full form, come too hard, and where there is not room to place a high

bearer, then a piece of double pica reglet pasted on the frisket in the usual way will answer the purpose.

It happens occasionally that the tympan touches the form partially, and occasions slurs; to prevent this inconvenience, it is customary to roll up a piece of paper, similar to bookbinders headbands, and paste it on the frisket adjoining the part; this roll of paper takes a slight bearing on the furniture, and is a remedy. A piece of cork is preferrable in the opinion of some pressmen.

When a high bearer does not ease the pull sufficiently on particular parts, it may be added to, by pasting slips of paper on it, as overlays, or underlays; and a bearer of reglet may be added to in the same manner.

Alteration of Margin.—The alteration of margin requires care; for it not unfrequently happens that the sheet is imposed with the wrong furniture; and where it happens to be in one form only, and that is first laid on, it sometimes passes undiscovered till a revise of the second form is pulled, when the error is detected, but too late to rectify it; the consequence must be, to cancel a part of the sheet, or to print the reiteration with the margin also wrong; nay, sometimes both forms are worked off with the furniture wrong, without being perceived till found out by the compositor when distributing, particularly when they are printed at different presses. These errors are the destruction of all uniformity, and produce a disagreeable appearance when the book is opened in that part.

These mistakes can only be avoided by care and attention on the part of the compositor, the reader, and the pressman; but I have practised with convenience to myself, and would recommend, that the furniture for the alteration should be cut of different lengths from the furniture of the small paper: in octavos, the gutters and backs should be the exact length of the page, and be always imposed within the side stick; and the head should be the width of the two pages and the gutter, and imposed within the foot stick. This method of cutting the furniture for the alteration of precise lengths, and locking it up within the side and foot sticks, will not only distinguish it from the rest of the furniture, and from the pieces that may be put in for the convenience of quoining the form,

but will also preserve it from being injured by the mallet and shooting stick in locking up, and by the indention of the quoins.

The same principle, of cutting the alteration to precise lengths, and locking it up within the side and foot sticks, will hold good in all other sizes, where it is required: in quartos, the pieces must be cut to the length and width of the page; and in folios, to the length of the page only, as the margin of the head is regulated at the press.

Set off Sheets.—In splendid books, and particularly where the paper is large and heavy, Set off Sheets are used to interleave the whole impression while working, and which are continued in it till the printed paper is taken dry from the poles, when they are taken out by the warehouse man. These Set off Sheets are put in when the white paper is working, and moved from one heap to the other during the working of the reiteration. They prevent the ink setting off from one sheet to another while it is newly printed, which it would otherwise do from the weight of the paper; and also from fine printing being usually worked of a full colour; and more particularly where the type is large.

In working the reiteration, in all kinds of work, but more particularly in common work where weak ink is used, the ink on the paper from the first form gradually parts with a small quantity to the tympan sheet; this accumulates, and sets off on the back of the sheet, that is printing, so as to produce a muddy effect on the types, or engraving; to counteract this inconvenience, a sheet of white paper is slipped at the edges under the points, to keep it in its place; the moment there is any appearance of setting off the sheet is turned, and when the same effect is produced on that side, it is replaced by a fresh sheet.

Proofs.—There is one part of the process of printing, which, for the sake of correctness in a work, ought to be done in a far superiour manner to what it generally is; I mean the pulling of Proofs, which are usually printed in a most slovenly manner, instead of having a clear and distinct impression. This arises, as well from the carelessness of the pressmen, who think it a hardship to pull Proofs without being paid for it, as from the proof press being commonly one that, from age and wear,

is unfit for general work. If the master printer would have a good press for this purpose, he might easily have good proofs; and an author might then correct his work during its progress with some satisfaction, and confidence in having it ultimately correct: whereas now, he is frequently puzzled to ascertain whether a word be right or not, owing to the bad impression; and often has to return a proof sheet to the printer with a query, which sometimes is not understood, and, in the hurry of business, is occasionally put to press incorrect.

It is usual, when working a sheet, to take the inner form first; the only motive, to my knowledge, for this custom is, where there are many presses at work, to prevent the pressmen taking advantage of each other, by those who are first off choosing the form that has the least difficulty in working. An old reason assigned for this practice is, that it is advantageous to the bookbinder in beating the book, preparatory to binding; as the indentions of the types face each other, and are more easily made smooth. But when there are wood cuts in one form, and none in the other, then the form without cuts should be worked first; as working the cuts last prevents the indention of the types appearing on the engraving, which would otherwise take place to its prejudice.

In working the first form it is desirable to prevent the sheet slipping down; with cards and small paper, pins are used, stuck in the tympan: but, when the paper is large and heavy, a duck's bill is preferrable; this is a pointed tongue cut in a piece of stout paper, and pasted on the tympan at the bottom of the tympan sheet, so that the bottom of the sheet of white paper to be printed rests in the slit behind the tongue, and takes a good bearing.

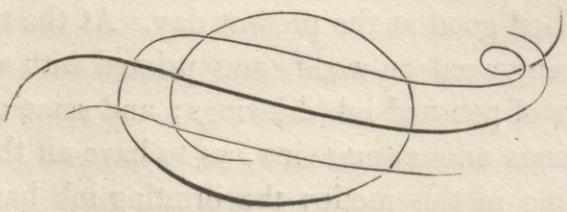
Large wood cuts left on the press stone all night are very liable to warp. When this happened, I have found the best method of restoring them to their original flatness was to lay them on their faces upon the imposing stone, with a few thicknesses of damp paper underneath, and to place the flat side of a planer upon them and four or five octavo pages of tied up letter; in the course of six or seven hours the block has resumed its former state.

This method is preferrable to steeping the block in water, which has been frequently practised; for the steeping swells the lines of the engraving, and consequently affects the impression, to a much greater degree than the above method.

A fine engraving on wood should never be brushed over with lye: the best method I believe is to wipe the ink off with a piece of woollen cloth dipped in spirits of turpentine; and if it should get foul in working to clean it with a softish brush and spirits of turpentine.

When only a few proofs are wanted from an engraving, good impressions may be obtained with little trouble on dry India paper, with about six thicknesses of the same sort of paper laid over it, and pulled without the tympan. This observation applies to small wood cuts, and those of a moderate size; if proofs are wanted from large ones, it will be found advantageous to put the India paper for a few minutes into a heap of damp paper.

However long a time box wood may be kept in the log, it will always twist and warp when cut to letter height for engraving, on account of fresh surfaces being exposed to the air. Large blocks may be restored to their original flatness, by laying them on a plane surface, with the hollow side downward, without any weight on them, in the course of a night.



DECORATIVE PRINTING.

CHAPTER IV.

PRINTING IN COLOURS.

THE art of printing in colours, for the purpose of imitating the ornaments with which manuscripts were embellished by the hand, appears to be nearly as old as the received account of the invention of printing.

The first edition of the Speculum, which was printed by Coster about the year 1440, as is supposed, is perhaps the first specimen of two different coloured inks being used on the same page; at least I believe it is the oldest known. The work is printed in two columns, with an ink of the most intense blackness; and the presswork is of a quality that would be called good at the present day. At the top of each page are two subjects engraved on wood, and printed with a bistre coloured ink, as fac similes of pen and ink drawings; and some of them are such close representations on a casual view, as to have all the appearance of an original drawing in this mode; the printing ink having the precise tone of writing ink turned brown with age, after the vegetable astringent has perished, and left the red oxide of iron as the colouring matter.

It is said that all the decorations of the Mentz Bible without date, which was printed by Faust about the year 1450, were painted; but,

in examining a splendid copy, I discovered that part of the ornamented border round the first page was printed with a dark blue ink, and thus served as a guide for the whole design, the other parts being finished with the pencil in different colours.

I have been told, that, if I am correct in the statement, this ornamented border must have been printed and coloured subsequently; that it is not part of the original work, and, of course, that it cannot be received as any proof of the antiquity of printing in colours: from the rarity of the book it cannot be supposed that I have had opportunities of examining many copies of this interesting edition of the Holy Scriptures; I have seen four, and only one of them contained the ornamented border, but it has the appearance of being coeval with the other decorations.

Papillon having stated that the large ornamented capital letters in the Psalter of Faust and Schoeffer, of the date 1457, were printed in colours, with a suite of three blocks, in red, blue, and purple ink, which he says are 'executed with a precision almost inimitable', that the 'red is of the most perfect beauty', and the purple 'beautiful', I obtained permission to examine a copy, that is said to be the finest known; and I found Papillon was right in the general fact, of the letters being printed in colours; but he was wrong in the details.

In the first place, there are not three colours used in printing these letters; there are only two: some of these letters are printed with red, and the ornamental parts, which are delicate lines, with blue ink; and other letters are printed with the same blue, and the ornamental part with the red ink.

This blue ink has a purplish cast when it appears on a large surface, as is the case where the broad letter is printed with it; and more particularly when it is contrasted with another blue of a most delicate tint, which frequently occurs: but it cannot be termed a 'beautiful purple'; in fact, I should designate it a dull blue.

Neither is the red ink of 'the most perfect beauty'; on the contrary, it is a very heavy brick dust colour; and we might suppose, by Papillon's

description, that he had seen a more splendid copy, if I were not satisfied that the one I examined is not inferior to any.

But, from his experience in engraving, I should be led to suppose that he had formed his opinion after a slight examination; and, perhaps, without looking at it in different lights, whereby a great deception would be produced in its appearance, which might lead him to form erroneous opinions: and this was nearly the case with myself, when I examined this splendid production of early typography.

In turning the volume over at a table, I could not help admiring the great accuracy with which the workmanship was executed, in inserting a large capital letter into the surrounding ornamental part, where the exact shape is bounded by a fine line of a different colour, so near to each other, as to be separated by a space not more than the thickness of writing paper, and uniformly true in every instance.

There are a number of letters of a beautiful light blue colour, and when contrasted with the blue ink with which the large letters are printed, they give the latter an appearance of a purplish hue: and I also could not avoid expressing my astonishment at seeing in some pages two distinct red inks; one, the dull colour before spoken of, and the other, a red which, in printing, might fairly be called of the most perfect beauty; and I had nearly left it with the belief, that there were two inks, red and blue, used in the printing of this book, which, for brilliancy of colour, would set at defiance all the efforts of the present day to equal them.

Some accidental circumstance caused me to view the book in a different light; when I discovered that the beautiful red was not printed, but written in, so exactly like the type, that it could only be ascertained by the want of indention in the paper, which is invariably produced by pressure in the process of printing; by the same means I also ascertained, that the fine delicate blue was painted. Thus the colours produced by printing, in the capital letters, are reduced to two, namely, dull blue, and dull red; and in the whole volume there are no letters produced with a suite of three blocks.

The black ink is of a very intense colour, and glossy, so as to produce the effect of writing ink in which a great deal of gum had been used in the composition.

On some of the leaves where music is given, there is an appearance as if the oil in the ink had penetrated through the vellum, and tinged the opposite side of the leaf with a dingy yellow. This had been supposed to be the case; but I found the original tune had been printed with a dull yellow ink, and that subsequently a different one had been written in, over the first, with black ink to match the colour of the text; and so exactly is this effect produced, that, if it were not for the remains of the printing of the original tune, it might pass unsuspected of being any other than the production of the press.

The second edition of this book is not equal in appearance to the first, the workmanship being much inferior, and printed on parchment: compared with the first edition it is a common production.

The large ornamented capital letter at the beginning of the volume has been copied at different times; but I have not seen a faithful representation of it, as to drawing and colour combined, by the same process that produced the original. I have attempted this by an engraving on wood and the type press, without the aid of copper or the rolling press, having obtained the permission of Earl Spencer to have a tracing made from his copy. It will give a more satisfactory knowledge of the skill in printing of that day than any words; and may be gratifying to those who have not opportunities of inspecting those scarce and curious specimens of printing.

When the observations in the Introduction, from page 7 to page 11, were printed, I had not had an opportunity of examining the first editions of the Speculum, the Mentz Bible, and the Psalter, which carry back the art of printing with coloured inks further than I there spoke of; however, as those observations refer generally to imitations of drawing, I feel that these additional instances do not invalidate, but, on the contrary, add strength to, my opinion of the antiquity of the art.

The ancient mode of taking impressions from engravings on wood,

has given rise to many suppositions, and much observation, on account of the paper of many of them being evidently rubbed on the back with a hard substance, as if it had been for the purpose of taking the impression by means of a burnisher, without the aid of a roller or a press.

Now my supposition, of the greater antiquity of printing in Europe than is generally acknowledged, and that the early productions were disposed off as manuscripts and drawings, would account for this peculiarity in a simple and easy manner; it is well ascertained, that they were printed on one side of the paper only, and two pages were pasted together, by which means the back of the impression was hid; this burnishing on the back appears to have been intended solely for the purpose of taking out the indentions from the paper, to make the face of the page smooth; and of giving it more the appearance of a manuscript.

I shall now proceed to the practical part of printing in colours; and, in illustration, I shall give a number of specimens treated in different ways, for the purpose of more fully explaining the process, and of showing the effect that may be produced in a variety of subjects.

For this purpose I have given specimens of both simple and complex subjects: and there will be found in this part of the volume an attempt at a variety that the process has been thought capable of treating in a manner at all satisfactory; the work not being meant to illustrate the practicability of producing any particular subject, in preference to another; but to show its general application, for the purpose of enabling the public to judge if the art can produce imitations of drawings, in a manner worthy of the patronage of an enlightened age.

I have exhibited engravings on wood printed with black ink; and varied with inks of different colours, to show the effect of those coloured inks singly, without being contrasted with others; afterwards a second block is added, to give a tinted ground, to represent pen and ink sketches on coloured paper with the lights put in with white.

In imitation of slight drawings in sæpia and Indian ink, I have given specimens, one with three blocks, and increased the number to nine, as an attempt to imitate more finished drawings.

I have printed the head-pieces as cameos, in different colours, to show the different effects that the same subject produces, and also to show variety of inks.

In heraldry I have given the paternal arms of Earl Spencer, printed in their heraldic colours.

In the imitation of coloured drawings I have combined a succession of fourteen blocks, a greater number than was ever used before for one subject printed in colours. The number of blocks might be carried to almost any extent, in order to produce more tints, if it were necessary to give a more finished and delicate appearance to the imitation of a drawing; but I am afraid that the trouble and tediousness of the operation of printing would more than counterbalance any advantage that might arise; and would only be a matter of curiosity, to show how far the art might be carried.

In the attempt to represent natural history, I have given a specimen of a flower, an insect, and a bird.

In sculpture, I have selected a bas-relief, a bust, and a statue, from some of the finest remains of antiquity.

I have also introduced a Grecian vase, from the Hamilton Collection, and a stained tile.

In ornamented initial letters, I have given two examples; one, the first letter in the Psalter of 1457, printed by Faust and Schoeffer, which will show the taste and skill of that day; the other, a splendid letter, designed and engraved by Branston purposely for this work, that shows his ability in this kind of ornament.

I have thus endeavoured to give specimens in many varieties that the art is capable of treating: in some instances it will be found that the subjects are more favourable than in others, and that I appear more successful in the execution of them—but the whole is a first attempt only, and as such I submit it to public indulgence.

I can truly say, that I have spared neither time, trouble, nor expense; nor have I been niggardly in giving my share of knowledge to

the public; and, when I found that deficient, in endeavouring to improve it, for the purpose of making the work as satisfactory as the nature of the subject and my abilities would admit.

Before I proceed to examples, I shall give a table of some of those colours I have used in this volume for printing inks. This table will enable a person to judge what effect different colouring matters will produce, without being at the trouble of making experiments; for it will be found in practice, that every colour will not produce the same tint when printed, that it will when used as a water colour. The table will also serve to give a choice of colours for inks that may be more applicable to many subjects than black; and few of them have been used in letter-press printing.

These colours may be used for printing fine engravings on wood; and I have given two subjects printed with those that possess the greatest depth of colour: in fact, every colour that is used in painting may be applied to printing ink. The table will ascertain which are fleeting, and which are permanent; and will also show any difference that may arise from being printed on metal and on wood, on which account I have printed the name with a large type.

In the first page of the table will be found specimens of Venetian Red, Indian Red, and Lake.

Venetian Red makes a smooth ink with little trouble; Indian Red is a very hard, harsh, colour to grind, yet produces an ink that is not difficult to work; and Lake is made into ink with facility.

II. Vermilion, Orange Lead, and Burnt Sienna.

Vermilion is a colour that is generally used for red ink, and perhaps there is no colour that varies so much in its properties, or in its appearance; of course it is always desirable, and is done by those printers who pride themselves in having a good red ink, to select that which produces the brightest colour when printed. I have found that pale Vermilion, when used by itself, has given a richer colour than that which is deeper; the latter generally giving a heavy dull colour. To heighten its effect,

some mix with it Orange Lead, others a little Lake, and some few, for particular purposes, a small quantity of Carmine. I think Chinese Vermilion will make the brightest coloured red ink where Vermilion is the basis: but there is a circumstance which contributes much to the beauty of red ink in printing, that is too frequently overlooked, or neglected; I mean contrast: and I think I may safely assert, that where a red ink can be introduced so as to come nearly into contact with a good black, printed of a full colour, it shall look so superior to the same red when insulated, as hardly to be credited that it is the same colour. For the purpose of having a full colour and sharp lines, it ought to be ground up of as strong a consistence as it can well be worked; and the form should be well beat.

Orange Lead is frequently used for red ink, where cheapness is required; it is a colour that is not difficult to grind.

Burnt Sienna is useful where warm yellow or orange is wanted; for shading yellows, and giving them depth.

III. Yellow Ochre, Gamboge, and Chromate of Lead.

Yellow Ochre grinds easily, and is a good colour where a dull yellow is wanted, particularly in the representation of stone buildings.

Gamboge is a transparent colour; and with Prussian Blue makes a fine green for glazing.

Chromate of Lead is the brightest yellow I have used, or am acquainted with. With blues it forms good greens, and is particularly easy to grind.

IV. Indigo, Prussian Blue, and Antwerpt Blue.

Where a powerful blue is wanted, not very bright, Indigo will be serviceable; where a brighter deep blue is required, Prussian Blue will answer better. Both these substances require a good deal of grinding to make them smooth. Where a light blue is necessary, Antwerpt Blue is preferable to either, and makes a smooth ink with little trouble.

V. Sæpia, Burnt Umber, and Bistre.

Sæpia is a colour that is now much used by artists in water colours

in lieu of Indian Ink, as possessing more richness and depth; it may be useful in printing, where a fine mellow ink is required, that is not of intense blackness.

Burnt Umber and Bistre were anciently much used for printing in colours. The first is a good brown; the latter is very difficult to grind smooth.

VI. Neutral, Purple, and Green.

Neutral tint is very useful in a number of cases where a coloured landscape is treated, it comes into the skies and distances, and may be varied to any tone that is required. It is composed of Prussian Blue, Lake, and Gamboge.

Purple and Green are given to show the composition and effect of those colours. The first is composed of Antwerpt Blue and Lake; and the other of Antwerpt Blue and Chrome Yellow.

These inks are not given as specimens of brilliant colours, the substances being those of commerce, without any preparation; but to show what tint the simple colours will produce. Most of them may be heightened by judicious mixtures—and by contrast.

To these may be added, Carmine, which is richer, and possesses more depth, than Lake—Red Lead—Roman Ochre, less bright, but of more depth, than Yellow Ochre—Gall Stone, and Indian Yellow, transparent colours—King's Yellow, the colour in general use; it has a disagreeable smell, and is much inferior to Chrome Yellow—and Patent Yellow.

Light Prussian Blue, nearly equal to Antwerpt Blue—Smalts and Cobalt Blue, the last of which is a beautiful colour in the powder; but neither of them are calculated to be of general utility in printing, on account of their extreme hardness under the muller, and their grittiness—Verdigrise.

Indian Ink may be used to give the appearance of a drawing made with the same material; but it does not possess sufficient blackness necessary for the deepest parts. For them good black ink may be used.

Venetian Red.

Indian Red.

Lake.

Vermilion.

Orange Lead.

Burnt Sienna.

Yellow Ochre.

Gamboge.

Chrome Yellow.

Indigo.

Prussian Blue.

Antwerpt Blue.

Sæpia.

Burnt Umber.

Bistre.

Purple.

Neutral.

Green.

Lamp Black and Ivory Black are occasionally necessary; but, in general, the best black ink will answer the same purpose.

Having enumerated all the colours necessary for producing imitations of drawings, I shall proceed to give some directions for this mode of printing; the result of my own experiments.

Jackson, the first who attempted to print with colours, and who also did considerably more than any of his predecessors in printing cameos, after the paintings of the most celebrated masters, published nothing explanatory of the art. The only observations he makes are, that he had invented a mode of splitting tints; and that he discarded the common type press, as not being suitable to this kind of printing, and invented a press on a different construction, that was superior in its operations.

Papillon, the only practical writer on the art, published his work on Engraving in Wood in 1766, which contains a great deal of curious and interesting matter; but his description of the method of printing in colours contains little or no information that can be serviceable at the present day. He advises the use of the rolling press, in preference to the type press; and recommends that each copy should be finished before another is commenced; at the most he advises not to have more than twenty in progress at the same time, for fear of variations in the paper, from its drying. He never speaks of a suite of more than four blocks; his directions are generally for three.

In the Appendix I have given a translation of this Section of his work, in which will be seen an account of the method of printing cameos by means of the rolling press; which may be serviceable, should any one prefer that machine to the type press.

An examination of old engravings on wood, printed in colours, was all I had to guide me; and, contrary to both Jackson's and Papillon's opinions, I have made use of the type press, which I have found to answer every purpose.

I have also invariably printed the whole impression from each block before I have proceeded with the continuation, without experiencing any

particular variation in the paper; adopting only common precautions to prevent its drying; one of which was, to keep the edges from being too near the fire; and another, to keep the outside wrappers damp; and to continue to work the succeeding blocks in the same order that I had done the first; so that, if there should be any variation in the dampness of the paper—provided it be kept in the same state as when the work was commenced—after register is once made accurately, it will continue the same, even should some of the paper be wet and some dry.

When wet paper was worked, I found the best method was to interleave it with damp paper, in the same manner that set-off sheets are used in fine work; for, where thirteen or fourteen blocks are used, working the paper so many times will make it drier, and that alters its dimensions: but, when a subject requires only three or four blocks, I should work three or four hundred impressions, without any other precaution than wetting the outside wrappers at night, and, perhaps, at the dinner hour, and should have no fear of their getting out of register.

When a subject requires many blocks, or when it is large, four points will be necessary. They keep the paper steadier than two; and serve to show any variations that may arise, from its shrinking, or expanding.

Sometimes there are small parts in a drawing of a different colour from any other part. Where this happens it will save a block and time in the working, to introduce these small parts on some other block, where they may stand clear of its tint, and to beat them with their proper colour with a small ball.

As I shall describe the manner of printing each subject that is in this volume, it will not be necessary in this place to enter into detail what tints should succeed each other; indeed it would be impracticable: for no particular rule would hold good, as different subjects require the tints being worked in different orders. Sometimes, for the purpose of producing the best imitation of a drawing, it will be proper to work the lightest tint first, and proceed progressively to the darkest shades; at other times, the lightest may come last, and glaze the others: in this

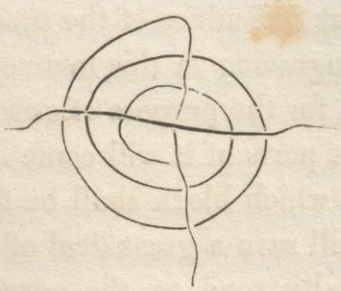
case it will in some measure take out the indentions, and soften some of the shades into each other, where it is necessary, or advantageous to the general effect.

In commencing a landscape, I should recommend to begin with the sky; as by avoiding glazing with these light tints, the subjects of the composition will stand more distinct from the back ground than they would do if these washy tints were printed the last. In proceeding to the middle tints, it will sometimes be found advantageous to omit a progressive block, particularly when it covers a large surface, and take the next in order; and perhaps finish with the one that was omitted.

In subjects of natural history, glazing will frequently be found of particular service in softening the tints into each other. This is also the case in the foregrounds of landscapes; and, indeed, wherever sharpness of definition is not required, it will be found advantageous.

In printing washy tints, the ink must be diluted with varnish to the proper tone, and a very small quantity should be used. The block must be carefully and well beat; if there be any superfluity of ink the tint will not be flat, and the ink will be squeezed into the edges of the engraved parts, and give the appearance of lines. The pull must also be very strong, so as to have a great pressure on the surface of the block, else there will be inequality in the colour.

In proceeding, the ink must be thickened with colour to match the tint required; and thus advance progressively to the greatest depths.



CHAPTER V.

ILLUSTRATIONS OF THE PRECEDING OBSERVATIONS.

In selecting a drawing to imitate, by means of engraving on wood and printing with the type press, it will be found desirable that the tints should be as little blended into each other as possible; but laid on flat as the nature of the subject will admit.

When this is the case, the trouble, both of engraving and printing, is materially lessened; and the copy, under careful and proper management, becomes a much closer imitation of the original, than when the attempt is made with a highly finished subject, where the colours are insensibly shadowed into each other, which requires many blocks, and great attention in analyzing the drawing, to produce the desired effect, which is one of the great difficulties of the process.

The first step, in engraving in this manner from a drawing, will be to examine it carefully, for the purpose of ascertaining how many blocks it will require, and what parts of it will come into each. It will then be necessary to determine which block shall be first engraved; and this is of consequence, as it will save a great deal of trouble in the progress of the work, and materially tend to the accuracy, and to the correct imitation, of the drawing.

If the subject has an outline, it ought, by all means, to be engraved first; as it will be an easy and faithful guide for all the other parts. This outline may be traced, and burnished on the block in the usual manner. After it is engraved, an impression must be printed, and, if the subject be small, it may be burnished on another block; when the tint that is required to be taken may, easily and correctly, be washed in on the block; and thus the whole subject will advance progressively, till it be completed.

If the engraving be large, or even as large as those generally in this volume, it will be found difficult to burnish impressions from the first on the succeeding blocks; the paper, owing to its size, expanding so much in the operation, as to prevent the united impressions fitting each other with precision, when they are printed. To remedy this inconvenience, I adopted a plan, which the engravers on wood acknowledged to be the most accurate method of transferring an impression of one block to another: it is, to make ready, in the usual way, the first engraved block, so as to produce a good impression in every part; when this is effected, to paste a piece of damp paper by the corners to the tympan sheet, and pull an impression of a full colour; then to take out the block from which the impression was printed, and substitute in its stead a similar sized block, prepared for engraving on, turning down the tympan, and placing some sheets of paper on it—as many as will cause a very heavy pull—then to pull the bar of the press home; when, on turning up the tympan, there will be found a reimpression on the block, more faithful than any burnishing, or even tracing; and sufficiently distinct for the engraver to touch up all the necessary parts. In small subjects this reimpression will be perfectly clear and sharp.

If the subject has no outline, I would then recommend, that the first block engraved should contain all the leading and material parts; for it will be a saving of time, in many instances, to engrave on this block a little more than will be wanted to print from it, on account of obtaining the reimpression, as a guide for the subsequent ones; and,

after the whole subject is engraved, and made accurate, those parts which are not wanted in the colour or shade of this particular block, may be cut away; and this remark will hold good when there is an outline.

Of wood to engrave on, I may perhaps be allowed to hazard a few words: I have used only what is termed Turkey Box, and I do not at present feel qualified to speak of the comparative merits of other woods, but I have given, in the Appendix, the Section of Papillon's work on this subject, which will be found interesting to engravers, from the number mentioned, and as being the observations of a man who had practised the art during a long life.

The Box wood that is generally used for engraving on, comes from the Mediterranean: it is the greatest in diameter of any that can be procured; but it is rare to meet with the largest pieces free from cracks and flaws, and still more rare, when they are found promising on the exterior, to find them sound at the heart; so that it becomes a speculation to purchase large wood, as each piece cuts generally into twenty-four rounds, of the proper height to engrave on for letter-press printing.

As English Box wood is equal in quality for engraving on, to any other, I think that our great landed proprietors would do a service to the art of engraving on wood, by planting a few patches, for the purpose of providing a resource for our artists, of a wood that is unequalled in its properties, possessing—hardness—toughness—closeness of grain—power to resist great pressure—durability, not being affected by the worm—and the property of not wearing out easily; an engraving on good Box wood, with careful usage, being capable of printing four or five hundred thousand impressions.

The only objection to English Box is its inferior size: this may probably arise from its being cut too young, or being planted too close together; but, if our native species does not naturally grow large, we have now the Buxus Balearicus, that is hardy, and which I should suppose is the same that is imported in the wood.

When I have made the observation, that I would recommend planting Box, there has been urged against the measure, the slowness of its growth: but it is not customary for men to plant trees, calculating that they will reap the benefit of the timber; public spirit is not so low with us—else who would think of planting an oak or a walnut tree? Yet these trees are planted in England by thousands and hundreds of thousands every year.

I have frequently quoted Papillon's work on Engraving in Wood, and have given two of his Sections in the Appendix. I mention this the more particularly, as his work, although generally known by name, is far from being common; and few people, comparatively, have read it. He has been strangely treated—abused—ridiculed—treated as a madman—quoted for his veracity—quoted as a liar—praised for his abilities—and praised for his honesty—as it suited the turn of those who spoke of him; for all make use of him for different motives; he standing almost singly as a practical writer on this subject; and his work contains a great deal of curious and interesting matter: but the improvements that have taken place since he wrote, have nearly superseded the practical part of his book; and for the historical part he has been treated as I have above stated.

He had a great deal of vanity; but that may be in some degree excusable, for he was writing on his favourite art, in which he was an enthusiast, and in which he believed himself the first practitioner: his vanity made him speak of himself and his abilities rather too much; and the state of knowledge of his profession in that day, induced him to take for granted things, that are now looked on as erroneous:—but, in writing on the practical part, it must be evident to every professional man, that he wrote on a subject he was intimately acquainted with in all its details, and that he wrote facts; for all his explanations and descriptions, as far as they go, agree with the knowledge derived from modern practice. This induces me to believe, independent of any other testimony, that he wrote honestly in all the parts of his work: in fact, he is too artless in

his narratives, too minute and verbose, generally, for one who was inventing a tale; and his language has all the tittle-tattle and gossiping of an old man, who is relating circumstances that he himself is well acquainted with, and proud of knowing; and that he wishes to impress on his reader's attention.

In giving directions for this mode of printing, I have before said they are the result of my own experiments, and when I say so, I would wish to be decidedly understood, as not having received any practical information from any source—the project was entirely my own—and the execution, so far as regards the printing and the inks, has been the result of a continued and protracted series of experiments; which, in many instances, were prosecuted for the purpose of overcoming practical difficulties that arose in almost every stage of the work. These difficulties and these experiments frequently elicited new facts, and gave hints for further improvements, which I endeavoured to prosecute: the consequence has been, considerable delay in the publication, attended with great expense and loss of time to myself; but, I believe, to the material improvement of the book, for I have endeavoured to give my increased knowledge in the work, which I am sensible is much more than when I commenced the undertaking, as I have given many subjects that have met the approbation of judges, which at the outset I durst not have attempted.

In painting with oil or water colours it is found difficult at all times to produce the desired effect, with all the advantages of heightening, retouching, and glazing, which are always practised: I would mention, that in printing in colours, these facilities cannot be resorted to; for when the paper has once received the impression, it must remain without alteration.

The consequence is, the mind must be always attentive; for the utmost care is required at the outset, and during the progress of a subject, to obtain, and to preserve accurately the tint that is wanted: if the general judgement of the eye be trusted to, it will frequently be found

fallacious; and when a light tint at the commencement of a subject, that has many blocks, is thought, by this criterion, to be correct, it will often, before the piece is concluded, be nearly carried away by the greater depths, and leave little more effect than the white paper on which it is printed.

In a close and continued application even to a mechanical operation where the mind is employed, and the eye is obliged to be constantly on the alert, it is well known, that with every exertion to keep the attention to the subject, it will wander; the hands then proceed mechanically, while the power that should govern them is roving after some other pursuit; or some whim or fancy flits across it, and leads it astray, to the neglect of its more immediate avocation.

If this takes place in health, it cannot but be effected in a higher degree when the body is oppressed by indisposition: the mind then generally becomes incapable of close and unwearied application; and when it is obliged to be, as it were, chained to the oar, with nearly dormant powers, the effect must be inferior productions.

I have been led to these observations by the appearance of different subjects in this volume, some of which bear the mark of superior workmanship, when, in fact, the same care and attention have been endeavoured to be bestowed on all.

The whole of the subjects were printed by one of my own family—who does not possess great bodily power—with a strong anxiety to make them equally good; but they were obliged to proceed without stoppage or relaxation, during health and indisposition, in order to bring out the work as speedily as possible, it having been delayed so long by uncontrollable causes. When the progress depended on myself and family, there was a decided resolution that exertion and perseverance should go hand in hand.

APPENDIX.

No. I.

BRIEF ACCOUNT OF ENGLISH LETTER FOUNDRIES.

It is conjectured, with great probability, by Ames, in his Typographical Antiquities, that the first English Letter Founders were likewise Printers. He has given a list of persons who made a separate trade of Letter Founding, among whom the name of Joseph Moxon is alone eminent. Moxon's publications are well known; as a theoretical Letter Founder he has, perhaps, no superior, if we except the celebrated Frenchman, Fournier.

Of the rest, little more than the names have been preserved:* their Foundries are extinct, and were in their day so little esteemed, that the British Printers were in the habit of importing founts from Holland, where types much superior were manufactured. During the reign of Queen Anne, the Augustan age of English literature, our printing types were in such a state of disgraceful inferiority, that most of the immortal productions of that period were originally printed on Dutch Types. The Printers were naturally dissatisfied with the trouble and expense of im-

* The best account of the old English Letter Foundries may be found in Mores's Dissertation on Typographical Founders and Foundries. His pedantry and occasional ill nature must be forgiven for his learning, humour, and preservation of facts, which, but for his attachment to a dry subject, would unquestionably have been lost.

porting foreign Types, which might have continued to the present time, had not the attention of William Caslon been directed to the art of Letter Founding.

William Caslon was born in the year 1692, at Hales-Owen, in Shropshire, where he served an apprenticeship to an engraver in steel. At an early period of life he settled in London; and his taste and skill in ornamenting the barrels of fire-arms were much admired. Some letters which he had cut for bookbinding, attracted, by their accurate execution, the notice of Mr. Watts, an eminent Printer, who was dissatisfied with the state of the existing Foundries, and who, by promises of support, induced him to undertake the establishment of a new one. He likewise obtained the assistance of the celebrated Mr. Bowyer, and of Mr. Bettenham, who evinced an honourable solicitude for the improvement of British Typography.

The difficulties he had to surmount were numerous—he had to acquire a theoretical and practical knowledge of a complicated art, with which he was entirely unacquainted; to instruct his workmen in the subordinate branches; to superintend his whole manufacture, and to ensure success, it was necessary to surpass the productions of his rivals. He had likewise to acquire a capital; and by prudence and economy emerge from that obscurity and poverty in which skilful artists are generally involved, while their talents, useless to themselves, enrich their wealthy patrons. His success exceeded his own expectations and those of his friends. He put an end to the importation of foreign types, and completely eclipsed the productions of his rivals at home. His Foundry is an uncommon instance of human industry and perseverance. It soon obtained so decided a preference, that for upwards of half a century few works were printed with the Types of any other Foundry. William Caslon was as respectable as a man, as he was eminent as a Letter Founder. Perhaps few individuals were ever more amiable in private life; his liberality to his workmen, his hospitality to his friends, and his general benevolence, were distinguished.

At the close of his life he became a Justice of the Peace for Middlesex; and having taken his eldest son into partnership, retired to a house at Bethnal Green, where he died, January 23, 1766, at the advanced age of seventy-four. His Foundry was at first carried on at Helmet Row, Old Street, from whence it was removed to Ironmonger Row, and ultimately to Chiswell Street, where it is still conducted by a descendant.

He was thrice married, and left two sons and a daughter, all by his first wife. His eldest son, William, succeeded him in the Foundry; his youngest, Thomas, was an eminent bookseller in Stationer's Court.

The reputation of the Foundry was maintained, but did not encrease, during the life of its second possessor. He added little to the Foundry, and did not inherit the genius and enterprising spirit of his father, whose instructions, however, rendered him a good practical Letter Founder. He married Miss E. Cartlitch, a lady distinguished both for beauty and abilities, by whom he left two sons, William and Henry. He died, 1778, intestate, in consequence of which the Foundry was inherited in equal shares by his widow and sons, the elder of whom, Mr. William Caslon, was the acting partner.

Mr. William Caslon made few additions to the Foundry in the interval between his father's death and 1793, in which year he sold his share to his mother and sister-in-law. Mr. Henry Caslon married Miss E. Rowe, a descendant of the ancient family whose monuments at Hackney are so conspicuous. He died in 1788, leaving one son, to whom and to his widow he bequeathed his share of the Foundry.

From this period to 1798 the Foundry was at its lowest ebb. The perseverance of other Founders had at length overcome the partiality of the Printers to the Elzevir shape; and Mrs. Caslon, though a woman of considerable talents, and indefatigable activity, was, from her sex, unfit to conduct a Foundry, and being advanced in life, was too much prepossessed in favour of the productions of William Caslon, to be willing to undertake those improvements which the circumstances of the times required. She died, October, 1795, of an apoplectic fit. The nature

of her will required the decision of the Lord Chancellor, by whose direction the Foundry was sold by auction in March, 1799, and was purchased by Mrs. Henry Caslon.

At the death of Mrs. Caslon the situation of the Foundry was critical, and that of Mrs. Henry Caslon, the surviving partner, embarrassing. She was a woman of great merit: and to a fine person she united a highly accomplished mind, the strength of which, with the zeal and fidelity of her servants, enabled her to rescue the Foundry from the state of degradation into which it had fallen. Finding the old Founts irretrievably lost in the public opinion, she determined to have new ones cut. She had at the time of the sale a new Canon, Double Pica, and Pica, by which the Foundry was principally supported and kept open. Of these the Canon is now superseded by the modern fat faced founts; but the Pica is still preferred by some of the most eminent printers. It was an imitation and improvement upon the style of the celebrated Bodoni of Parma, and contributed very much to revive the reputation of the Foundry. The exertions made by Mrs. Henry Caslon had much impaired her health, which had some years before suffered from a pulmonary attack; and after the purchase of the Foundry she found it expedient to take an active partner. Her selection of Mr. Nathaniel Catherwood evinced the goodness of her judgement: his ability and activity essentially promoted the interests of the Foundry; and his character was distinguished by the higher qualities of integrity and benevolence.

The new partnership being established, the renewal of the Foundry proceeded rapidly. Every year its celebrity was extended, and its connexions enlarged. In 1808 it seemed nearly completed, and the proprietors indulged the hope of being able, after many years of exertion, to enjoy a comparative repose. Mrs. Strong* was at this period afflicted with a renewal of her pulmonary complaint, and was advised to try the

* Mrs. H. Caslon, in 1800, married Mr. Strong, a Surgeon, who died in 1802.

effect of Bristol Hotwells, whither she repaired in March, 1808. Her sufferings were protracted during a twelvemonth of almost incessant pain, which did not, however, subdue the vigour of her mind. Her letters, while under the pressure of an incurable disease, evincing the greatest fortitude and resignation, and replete with acute and ingenious observations, are more worthy of publication than many that are obtruded on the public. The year 1809 was likewise fatal to Mr. Catherwood, who died, most unexpectedly, of a typhus fever, on the 6th of June, greatly and generally regretted.

Since 1809 this venerable Foundry has been conducted with spirit and success.

Since the time of the celebrated William Caslon, a gradual but total revolution has taken place in the shape of Printing Types. His highly praised productions are now almost entirely discarded; but it must not therefore be thought that his reputation is unmerited. When he commenced his career the Elzevir shape was prevalent: he adopted and carried it nearly to perfection. For correctness and uniformity his Types deserve the highest praise; and so firmly were they fixed in the public esteem, that the time is comparatively recent in which a successful deviation from them has been achieved.

About the year 1750, Mr. Baskerville, of Birmingham, cut several founts, which, though shown to the greatest advantage by his admirable presswork, did not obtain the approbation of the Printers. He is, however, entitled to considerable praise—by abandoning the Elzevir shape, and following an imaginary standard of perfection, he led the way to succeeding improvements. The style of his Types is rather capricious than elegant; yet he has had a regular series of admirers to the present day.

In 1764 Messrs. Fry and Son began their Foundry, in which an imitation of Mr. Baskerville is evident. They likewise cut nearly every size after the plan of the Caslon Foundry. Their large letter was decidedly an improvement, and may perhaps be considered the first successful departure from the Elzevir.

Mr. Joseph Jackson, an apprentice of the second Mr. W. Caslon, established a Foundry in Dorset Street, Salisbury Square, about the year 1773. He adhered generally to the Elzevir shape. His Foundry, on his death, was purchased by Mr. W. Caslon, son of the above, who, as before related, had sold his share of his paternal Foundry to his mother and sister-in-law, and removed to Finsbury Square, whither he transferred Mr. Jackson's materials. Some time after Mr. Caslon removed them again to Dorset Street, and his residence in Finsbury Square became the Temple of the Muses of the celebrated Mr. James Lackington. Mr. Caslon very much improved Jackson's Foundry. His cast metal ornaments, which he has the merit of introducing into this country, are highly creditable to his taste. In 1808 he relinquished business in favour of his son, Mr. W. Caslon, junior, who has recently introduced a new and superior method of casting large letters.

Among the ephemeral Foundries that have disappeared, that of Messrs. Stephenson deserved greater success than it experienced. Though several of their founts were by no means ill executed, their design miscarried, and their materials were sold by auction.

Mr. Vincent Figgins, an apprentice to Mr. Joseph Jackson, established, in 1792, a Foundry in Swan Yard, Holborn Bridge, which he has since removed to West Street, West Smithfield.

Mr. Robert Thorne, who served his time to Mr. Cottrell mentioned by Mores, has been principally instrumental in the revolution that has taken place in Posting Bills, by the introduction of fat types. His Foundry is in Fann Street, Goswell Street.

Mr. Martin, about the year 1790, commenced a Foundry in Duke Street, St. James's, under the auspices of Mr. Bulmer. His Romans and Italics are cut in imitation of Baskerville's; but he was most successful in Greeks and Orientals. In 1817 his Foundry was purchased by Messrs. Caslon and Catherwood.

The list of London Letter Founders will be completed by the names of Messrs. Barton and Harvey, formerly in partnership, but now separated. Mr. Barton's Foundry is in Stanhope Street, Clare Market.

The foundation is laid for another Type Foundry in London.—This establishment was begun in 1818, by Louis John Pouchée, and is situate in Great Wild Street, Lincoln's Inn Fields; it appears to be prosecuted with vigour, and from its present forward state and management may be expected to enter into a spirited and extensive competition with the other Foundries. Specimens of some of the founts have been submitted to me for inspection, which are equal to any that have preceded them; and in many instances they show an evident improvement in a nearer approach to those proportions which harmonize the appearance of letters.

This Foundry has also produced a variety of Ornamental Letters, calculated for posting Bills, &c. of a new feature, that are superior to those now in use; and which, I think, will be looked on as peculiarly applicable where the subject is conviviality, masonry, or music.

The Foundry of Messrs. Wilson, at Glasgow, has been long established, and for many years enjoyed a monopoly of letter founding in Scotland. They have, however, of late experienced a formidable competition from Mr. Miller of Edinburgh, who derived his knowledge of the art from them, and whose types so much resemble theirs as to require a minute and accurate inspection to be distinguished. Another Foundry has, since the establishment of Mr. Miller's, been started at Edinburgh, by Mr. Matthewson; and one at Sheffield, by Messrs. Bower, Bacon, and Bower.

It is principally in uniformity that the Printing of the present day is deficient. In the original Caslon Foundry we find a general harmony, and relative fatness of the founts is duly proportioned. This produces in the books printed with them an appearance of propriety and respectability, for which we seek in vain in the majority of new publications. Yet some of the modern founts are cut on a plan far more elegant than the Elzevir; and it is evident, from a few of the productions of our best Printers, that a great superiority over our predecessors is attainable. Whence, then, the inelegant and heterogeneous nature of modern typography?

This is to be attributed to the plans pursued by the Letter Founders in the renewal of their Foundries. They quitted the Elzevir shape, and, cutting their founts without any common principle, produced some extremely elegant—some moderately so—and some inferior to the old. Between the productions of the different Founders there is scarcely any affinity; and, when used together in the same page, the want of uniformity offends the eye. This evil has been much encreased by the recent introduction of the fat letter, which in Bill printing is a great improvement; but when used in books along with the lean, produces a great incongruity. The fatness has been carried to an unnecessary excess, and some founts have been cut, totally unfit for Book printing, which have nevertheless been used for that purpose. The fat letter has now been introduced into all the Foundries, so that a Printer may have all his types from the same house, and yet mar his work, by blending the fat and the lean. The system used by the Booksellers, for the sake of expedition, of dividing an extensive work among several Printers, without insisting on uniformity of type, is sure to disappoint them, if they expect an elegant work.

A correct taste in typography is so rapidly diffusing itself, that it is to be hoped in a short time these censures will lose their foundation. Some persons, impressed with the regularity of the old types, and the incongruities of the new, lament that any alteration has taken place; and think that innovation has been mistaken for improvement.

The superiority of the new types in point of shape cannot be denied; their present beauty has been attained by a long course of competition and experiment, in which many failures of necessity occurred. That some of the intermediate founts, by which is meant those subsequent to the old Foundries and prior to the present time, are inferior to the old, must be admitted—that our modern typography has been disfigured by a mixture of discordant founts is indisputable—but if works have been printed decidedly superior to those of our ancestors—if we have all the materials for improvement, and have hitherto failed, only by an error in

selection, the time is not distant in which the reformation will be perfected, and the superiority of British Typography universally acknowledged.

No. II.

SOME ACCOUNT OF MR. BENSLEY'S PRINTING MACHINE, WORKED BY STEAM.

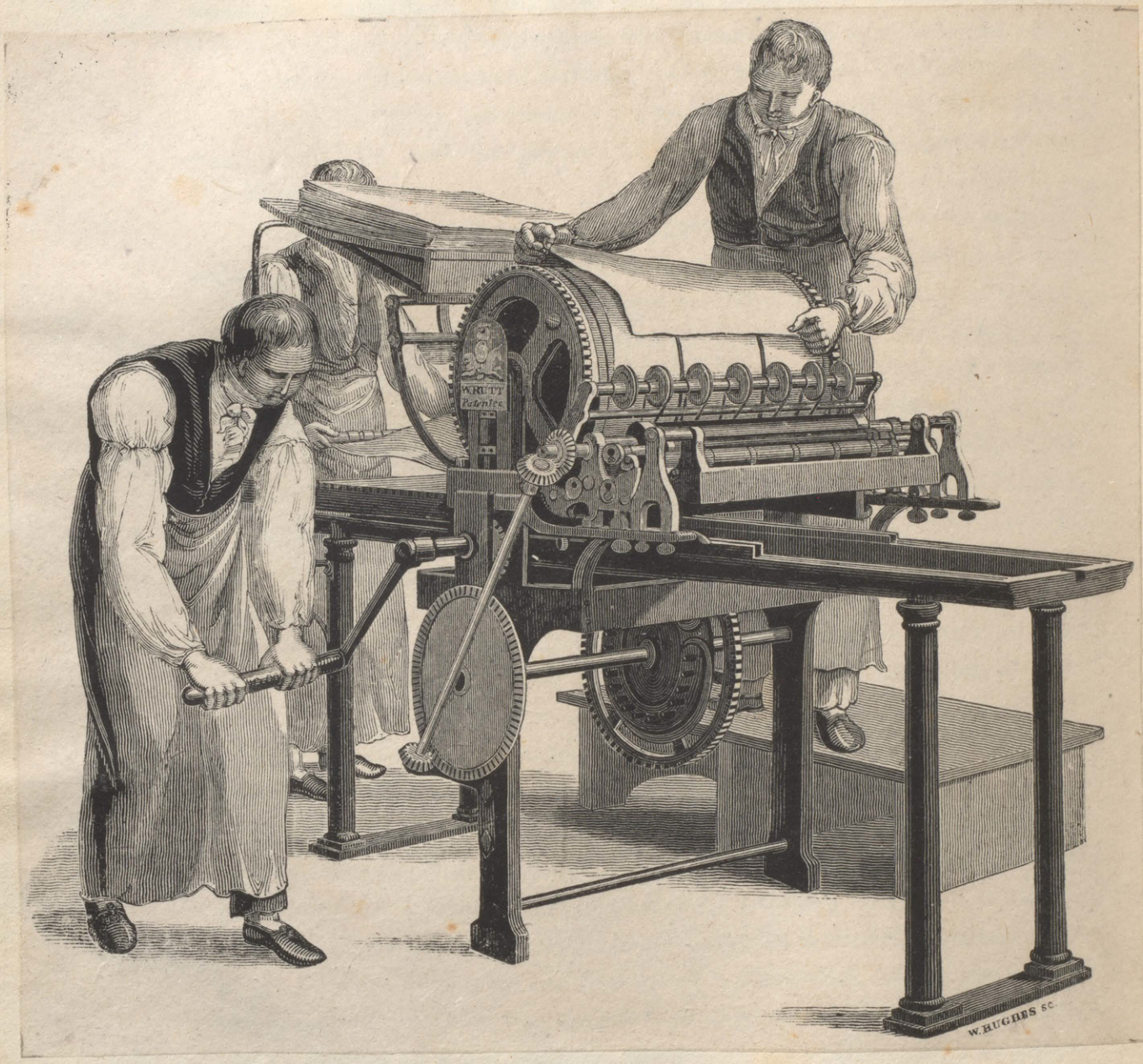
I AM now about to describe imperfectly one of the modern inventions for the improvement of printing, which has surpassed all expectation; to describe it perfectly would require a great number of drawings of the different parts with their combinations, and which, to make it completely understood, would also take more room in this volume than can be appropriated to the description of machinery; but some opinion may be formed of its powers, when it is known, that with two boys, and an overlooker to superintend its movements, it is capable of printing upwards of 900 sheets of double demy paper on both sides in an hour, at which rate I have seen it work.

It has also other advantages, which would not be expected in a machine capable of working with this rapidity; besides producing a more regular colour than can be obtained by the hands, without bestowing a great deal of time; it also possesses the valuable property of being less injurious to the types, than balls and any other press that I have examined.

"About twelve years ago Mr. Bensley was applied to by Mr. König, a Saxon, who submitted to him proposals for joining him in the prosecution of a plan for improving the common printing press, which consisted chiefly in moving the press by machinery, by which the labour of one man might be saved. A press was formed on this plan; but the

result was so unsatisfactory as to induce the rejection of it altogether. It will readily be conceived that this resolution was not taken till after numberless experiments had rendered the prospect of success hopeless. The idea of cylindrical impression now presented itself, which had been attempted by others without success; and a machine on this construction was completed, after encountering great difficulties, at the close of the year 1812. It may be proper here to introduce an outline of its operation.

"The *form* (i. e. the composed types) is placed on a carriage or coffin, which is constantly passing under the inking cylinders, obtaining a coat of ink, in its ingress and egress; these cylinders have a lateral and rotatory motion, for the purpose of equalizing the ink before it is communicated to the form. After the *form* is thoroughly inked, it passes under the printing cylinder, on which the paper is laid, where it receives the impression, and thence delivers itself into the hands of the boy who waits to receive it. This is termed a Single Machine; by the assistance of two boys it prints 750 sheets on one side per hour. As despatch, however, is of the utmost importance to a newspaper, it was deemed advisable to construct what is called a Double Machine. This differs in no respect from that above described, excepting the addition of a second printing cylinder, by which means, with the assistance of four boys, 1100 sheets are printed within the hour on *one side*. The Machines used for printing the *Times* newspaper are on this plan, and have now been constantly in use since November, 1814. After the Times' Machines were constructed, the grand improvement of the *Completing Machine* was suggested, so called from its delivering the sheet printed on *both sides*. It has a double inking and printing apparatus, with two carriages or coffins, each large enough to admit a *double demy form* $34\frac{1}{2}$ by 21 inches. The paper is laid on an endless web, called the feeder, which revolves at intervals; thence the sheet passes into the Machine, and is ejected in a few seconds, printed on *both sides*. By this means 900 sheets are struck off in an hour, printed on both sides, or 1800


W.RUTT
Patentee
W.HUGHES Sc.

impressions; if the double sized paper be used, 3600 single impressions. Two boys and an overlooker are all the assistance requisite, and a steam engine of one-horse power is sufficient force to impel it."

It is gratifying to remark, that this valuable invention has been greatly simplified and improved by the ingenuity of Mr. Cowper (an Englishman), of Nelson Square; not less than forty-three wheels, and much expensive work, have been discarded, by which the operation is rendered more facile, and the general result more satisfactory.

The patentees must feel a just pride that such an invention has been encouraged and completed in England, after every effort on the part of the inventor to introduce it in the principal cities of the Continent, had proved ineffectual. Further improvements are in contemplation, by which there is no doubt that work of the very best quality may be produced. In working wood cuts it is far superior to what might be expected of machinery.

No. III.

DESCRIPTION OF RUTT'S PATENT PRINTING MACHINE.

THE printing machine, of which the annexed engraving is a perspective view, is the invention of Mr. William Rutt, of Shacklewell, Middlesex, for which he has obtained his Majesty's Letters Patent; and for its simplicity and superior style of printing and making register, exceeds any printing machine hitherto invented. It is capable of printing any kind of work, in letter of any size, either in stereo, or moveable, type, with equal facility. The inking apparatus is so arranged, that by the action of the machine the requisite and regular supply of ink is received by the rollers from a duct peculiarly constructed, and communicated to the type in such a manner as to produce a complete uniformity of colour, however extensive the number.

The Form of type to be printed is placed on the table of the machine; the engraving represents the table at the back part of the machine, with the form of type just after a sheet has been printed, and the boy at the back in the act of taking it away; during the time the table is returning to the front part of the machine, the cylinder remains stationary, allowing time to lay a sheet of paper on it, as represented in the engraving, and, by a corresponding arrangement, the table gives motion to the cylinder, and causes it to revolve, which, in passing again to the back part of the machine, performs the operations of inking and printing.

From the principle of the motion introduced for the purpose of moving the table backward and forward, the man employed, as shown in the engraving, turns the handle always the same way. The bevil wheels at the side of the machine, are for the purpose of giving motion to the ink rollers; but by disengaging the bevil wheel on the upper end of the shaft from the bevil wheel at the end of the ink roller, the inking rollers can be worked independently of the machine, for the purpose of getting them in order previously to the commencement of the day's work. The small space this machine requires is also much in its favour, a room ten feet six inches, by seven feet six inches, would be sufficiently large for the full operation of one equal to a work on super royal paper.

It will print as many sheets in a minute as a man can put on the cylinder, which may be about fifteen; but its rate must be regulated according to the quality of the work required to be done.

No. IV.

DESCRIPTION OF APPLEGATH AND COWPER'S PATENT INKING APPARATUS.

THE Apparatus consists of an Ink Trough, an Inking Roller, and a Distributing Table.

The Ink Trough is fixed at one edge of the distributing table, and is composed of a metal cylinder, turned true, and fixed upon pivots, with a handle at one end, and a thin plate of steel, the edge of which presses against the whole length of the cylinder, by means of levers and weights, for the purpose of preventing any superfluity of ink on the face of the cylinder; the ink is placed on the steel plate, and in contact with the cylinder.

The Inking Roller is wood, covered with an elastic composition made of treacle and glue, and is about three inches in diameter, and eighteen or twenty inches long, according to the size of the form: it has two handles, which are fixed to a spindle on which the Roller turns; these handles stand over the Roller, at right angles to its surface, this position being found in practice most convenient. A small leg projects from one of the handles, which prevents them from falling upon the table, and becoming daubed with ink.

The Distributing Table is made of wood, covered with a sheet of lead, as level as possible. The frame on which it stands is cast iron.

When the metal cylinder is turned round it becomes covered with a thin coating of ink; the inking roller is then dabbed against it, and rolled backwards and forwards on the distributing table in different directions, to equalize the ink on every part of its surface; it is then passed two or three times over the form, when the face of the types will be inked in an uniform and regular manner.

The advantages of this mode of inking are considerable—it is much less laborious to use than balls—produces better work with less trouble —saves in balls and ink not less than five shillings per week for each press. Its peculiar recommendations are—the great regularity of colour which may be obtained, and the delicate manner in which the letter is touched, which will cause fewer accidents and less wear—advantages which render it applicable to the finest specimens of typography.

No. V.

ACCOUNT OF A CHEMICAL ANALYSIS OF FRENCH PLATE PAPER, INDIA YELLOW PAPER, AND INDIA WHITE PAPER, BY MR. FARRADAY, OF THE ROYAL INSTITUTION OF GREAT BRITAIN, IN A LETTER TO THE AUTHOR.

ROYAL INSTITUTION,
Oct. 8, 1818.

DEAR SIR,

I HAVE, in obedience to your desire, analysed the Specimens of Paper which you sent me; and herewith send you an account of their chemical nature. I will describe the result of the analyses, without any reference to their applicability, and afterwards make such observations as may suggest themselves.

One thousand grains of French Plate Paper, dried at 212°, were boiled for some hours in repeated portions of distilled water, until every thing soluble was separated from it; the solutions were filtered and evaporated; and, when reduced to a pint, formed a clear transparent fluid, of a pale yellow colour, which precipitated with galls, and very slightly with alcohol: when evaporated considerably, it gelatinized on cooling; and, on being dried, at 230° weighed 15.2 grains. Afterwards, treated with alcohol, 2.5 grains of extract were dissolved out; and the rest, with the exception of .7 of a grain of sulphate of lime, appeared to be gelatine.

Five hundred grains of the same Paper was burnt, piece by piece, in a pair of forceps, and the ashes received in a basin. They were not alkaline, nor did they effervesce on the addition of muriatic acid. Heated, until the excess of acid was driven off, the soluble salts were washed out with distilled water and filtered, and gave, alumina 2.4 grains; lime 0.6 of a grain; oxid of iron 0.7 of a grain.

The insoluble ashes were heated in a crucible of platinum with a little nitrate of ammoniac, to burn off the adhering charcoal, and left 2 grains: this analysed gave 1.3 grain of silex, and the remainder sulphate of lime.

One thousand grains of dried Yellow India Paper, treated in the same manner, gave, first, a clear solution of a light brown colour, which precipitated with galls, and lightly with alcohol. It contained a very little muriate of lime and muriate of soda. Dried, it became a dark brown solid substance, weighing 19.5 grains. Alcohol dissolved but a very small portion of it; and it was not very soluble in water: hot water dissolved it more readily than cold water; and when a hot saturated solution of it was cooled the substance precipitated, and the solution became opaque. Galls precipitated it readily, and there was apparently, from the nature of the precipitate, some gelatine in the solution; but by far the greater part of the substance appeared to me to be a peculiar extractive matter.

Five hundred grains burnt, gave ashes very strongly alkaline, and effervesced abundantly when acted upon by muriatic acid. The soluble salts, separated and dried, weighed 5 grains; and (the lime being converted into a carbonate, the state in which it existed in the paper) 3 grains of carbonate of lime, 1 grain of alumina, and 0.5 oxide of iron.

The substance unacted upon by the acid, gave 4.7 grains of silex, and 0.6 of iron, with a little alumine.

One thousand grains of White India Paper gave a light yellow coloured solution; precipitated lightly by galls, alcohol, nitrate of silver, and oxulate of lime. Evaporated to dryness, it split in various directions across the capsule; and weighed 21 grains. Like the substance obtained from the yellow paper, it was scarcely touched in some hours by alcohol: it was not very soluble in water; but more so in hot than in cold water: and, with the exception of a little muriate of lime and muriate of soda, I concluded it to be a peculiar extract.

The ashes (of 500 grains) were strongly alkaline, and effervesced

with muriatic acid briskly. The bases of the soluble salts formed, separated from each other, were as follows; 9 grains carbonate of lime; 4 grains alumine; 0.8 of a grain oxide of iron; and a small quantity of soda. The insoluble residuum examined, gave 1.3 grains silex, and 0.4 of a grain sulphate of lime.

I was somewhat surprized to find so great a difference in the quantity of earthy matter afforded by the two kinds of India paper; and still more so by the excess being on the side of the white paper. I had expected the contrary effect in a slight degree, from the supposition, that the material of the white paper had been submitted to cleansing processes; and I was justified by the results in a similar judgement respecting the French plate paper. That, however, I am nearly correct in the quantities I have given, though they oppose the preconceived opinion, is shewn by their near accordance with the weights of a more general analysis that I gave you some time since.

During boiling, the yellow India paper broke down into a magma, and formed a sort of paste. The white paper did not suffer so much in this way; and the French plate paper scarcely any thing.

I have been thus precise in describing the analyses, and the results afforded by them, rather to satisfy your earnestness, than from an opinion that they present any thing capable of improving the art of paper making: and I should expect that matter much more interesting would arise from an examination of the mechanical properties of the paper, and more applicable to the improvement of our own manufactory.

I have no doubt myself, that the superiority of the India paper is owing to the peculiar nature of the fibre used in its formation, and not to any particular process in the manufacture of it, or to the addition of any other substance. Indeed, as far as regards the making of it, I think it is inferior to our own; but it has a singular degree of ductility, even in the dry state, which far surpasses any thing I have observed in European paper: the slightest impression of the nail, or other hard body; the mark of a twist, or any form given to it by pressure, remain very

perfectly after the force which produced them is removed; and by simple extension of the paper, or other means, these may be removed much more readily and completely than they can from a piece of English paper. Now, I presume that it is to this property, and which belongs to the peculiar fibre of which the paper is composed, that it owes its superiority: it permits the paper to mould itself according to all the inequalities of the surface against which it is pressed; and, consequently, entering and filling up more accurately the lines upon the copperplate, it receives the ink from every place where it has been deposited, in a more perfect manner than any paper deficient in this quality can do. I endeavoured to convince myself of this, by scratching and cutting up a copper plate with a steel point, and then covering one half with folded India paper, and the other with French plate paper, submitting the surface thus covered to pressure: I found, on removing it, that though both papers had been in precisely the same circumstances, there was an essential difference in the impressed form received by them; on the French plate paper I could only trace the elevations formed by the deeper lines on the copper plate; but on the India paper every mark could be observed which the copper that it covered had received.

I will not extend these observations further than to express my opinion that the two sorts of India paper are made from the same substance; and that previous to its having passed through any other manufactory. It is probable that the large quantity of carbonate of lime in the white paper results from the use of lime in some state in the process of whitening; and the deficiency of silex in it would be a necessary consequence of its having undergone a more extensive series of processes.

I do not think that any thing has been added to the pulp of the India paper to make the fibres adhere, except perhaps to the yellow paper, where a little gelatine appears present; and where, from greater tenuity in the paper, it might be necessary. It is possible, however, that the whole of the extractive matter has been added; but I am inclined to

believe it comes from the fibre. Your researches, however, may probably have enabled you to make a much better judgement on this and other points than I can do; and I will therefore cease troubling you with further conjectures.

I am, Dear Sir,

Mr. W. SAVAGE. Very sincerely yours,

M. FARRADAY.

In this interesting Analysis of Paper, which I believe is the first that has been published, I must take the liberty of differing in opinion with Mr. Farraday, who doubts the results being of importance to the improvement of paper making in England. He has ascertained a very important fact, to my mind, which may lead our manufacturers to equal India paper: and I hope some of them will make the attempt, and succeed. The fact to which I allude is, that the India paper is made from a raw material, without any thing being added; and it will now rest with us to discover a cheap native vegetable, that possesses similar properties; and I should hope that such a one might be found: for there can be no doubt of the skill of our workmen being equal to the Chinese, in making the paper.

To those who are in the habit of using India paper it must be apparent that it abounds in small pieces of vegetable splinters, which have the appearance of having been part of the stalks of a hard grass, or some reed; and, as we have had paper made of straw, it is not, perhaps, speaking too speculatively, to hint that it might be worth while to make experiments with some of those substances; which, in the hands of our spirited manufacturers, might lead to favourable results.

Yellow India paper is evidently made in moulds; but the texture of the white India paper is completely different: it is smooth on one side, with a gloss; and the other side looks as if it had been brushed when soft, like a piece of wood painted by an unskilful workman. In fact, to

my eye, it appears as if the pulp had been laid on a smooth, plane surface with a brush, similar to a coat of paint; and that, when dry, it had separated from it, and was thus formed into sheets of paper.

In these conjectures I am actuated solely by an anxiety to see English paper equal for printing on to any that can be made abroad; and should they appear trivial, or fanciful, I trust they will still be attributed to the real motive.

No. VI.

OF THE WOODS BEST ADAPTED TO THE GRAVER, AND THE QUALITIES OF WHICH THEY OUGHT TO BE POSSESSED.

The two following Articles are translated from Traité Historique et Pratique de la Graveur en Bois, Par J. M. PAPILLON, Graveur en Bois, et ancien Associé de la Société Académique des Arts. Paris, M.DCC.LXVI. 2 vol. 8vo.

WE may engrave on all sorts of Wood, but they are not all endowed with the requisite properties; porous ones occasion faults in the outline of the engraving; and those which are deficient in humidity, and very hard, are subject to defect in losing out the grain. The woods best fitted for the engraver are box, wild service, and pear tree; we may make use occasionally of the apple, or crab tree; as also of the wild pear tree, called in France sauvageon, which is firmer than the wood of the cultivated pear; the garden and wild cherry tree, the wood of the last of which is very hard.

As the engravings of the ancients were not used in producing prints, they made use indifferently of all sorts of wood. Theophrastus speaks of a tree which he calls Persea, originally from Egypt, resembling pear tree, the wood of which was hard and firm, and was made use of for the

graver, and for many fine works—this wood is at present unknown. Pliny speaks highly of beech wood, supposed to be the one now known by that name; yet it might seem strange, supposing it to be the same, that it should have been so dear and so scarce. Whatever it might be, the ancients used it for making cups and vases, which they were in the habit of carving. The same author says, that spies made use of the bark of this tree fresh torn from the trunk, on which they used to write with its own juice; the reason probably was, that it was difficult to read the writing thus done, when dry; and that there was a secret mode of causing it to re-appear. Pliny, however, has forgotten to explain the enigma. With respect to what this author advances, viz. that the wood of the fig, willow, linden or lime tree, the birch, the elder, the alder, the aspen, the poplar, &c. are easy to engrave, because they are tender, the same as we mean by soft, woods; I should advise no one to make use of them, as the engraved strokes are easily battered, even in such a degree as to take place whilst we are engraving on them, as I have experienced in many trials. Besides, the veins of the greater part of these woods are so hard, such is the case with the fir, for example, that they are absolutely unfit for the graver. Nevertheless, the generality of engravers in wood are earnest in their search for tender woods, and greatly prefer engraving on the pear to box; as for me, I am not of their opinion.

The wood of the box tree is the first in rank, and the most excellent for the exercise of our art; but of it there are several sorts—and we must reject that which is knotty, and also that which has a greenish hue; the first is only fit for the cabinet maker, and the other is too soft. The best is of a yellowish cast, and when sawed across appears shining and full. That which is gritty at the end of the wood is absolutely worth nothing—it is too dry, or it is decayed. It is not to be understood here that dry wood is not the most proper for the graver, quite the contrary; but it is necessary to draw a line between that which is merely dried from having been cut across, and that which is entirely destitute of humidity, and which, by consequence, can neither be tenacious nor

pliant. There is no difficulty in distinguishing that which is good, as we have only need of taking a splinter of the box we wish to try, and break it between the fingers; if it break short, without bending, it will not be of any value; whereas, if there be great difficulty in breaking it, it is well adapted to our purpose.

Spanish box is the yellowest and the mellowest, but a little too tender for works of extreme delicacy. That of France is neither so yellow nor so mellow, but it is firmer, and is, from that circumstance to be preferred to the other. In some extremely delicate pieces I have occasionally made use of certain roots of the box tree, and with great advantage, because, being of extremely even texture, we are able to run our strokes at will, without fear of the point of the graver being broken by any resistance of the grain of the wood. But here again we must be cautious in choosing our material, because some specimens are so hard, as to render it difficult to enter the graver, and also to break it off every moment. That which I would recommend is pliant, of a greenish colour, spotted with small rounded veins in the form of knots: but these knots are only apparent, their colour arising from the soil in which they grew.

The box which is charged with large veins of a brown colour is hard, ill favoured, and subject to grain [*a égrener*] and ought not to be made use of. Box with a wavy grain is quite unfit for the graver; it is too hard, is liable to cause the point to slip out, and is only in request with instrument makers, on account of its beauty: when it is of a grey, or of a tarnished colour, it is apt to be quite unfit for the engraver's purpose. It is rare that we find large logs of box, the wood of which is proper for the engraver; and the larger the piece, the more it is necessary that we be on our guard against being deceived. Some time ago, very large logs were brought from Turkey, and sold at a high price on that account; I have had in my possession a good many pieces, which were purchased by my late father, but certainly they are by no means equal in goodness to that of our own country. I shall just state here, that it is but 150 years ago that the Indian box wood was in great request among the

engravers. It came by the way of Turkey, either from Smyrna or some other part of the Levant. *See the Preface to the French edition, in* 1614, *of the Catechism of Pierre Theologien, a Jesuit, printed at Augsbourg*, in which work it is said, that Indian box wood is well adapted for engraving.

The best box comes from Provence, Italy, and Spain; and the dealers in the article give the preference to that which is the produce of the two last countries; but, for my part, I find no difference in any of the three. I have used most excellent wood which has grown within ten leagues of Paris; so that we need not trouble ourselves with these prejudices and popular opinions, if we know how to select it. There is no doubt but the tree will thrive in a good soil, and that climate is of less importance in the matter than has been apprehended. The wood too is possessed of such an indisposition to decay, as to prevent the attack of worms; and this is a circumstance of no small importance to the engraver in wood.

This wood is sold wholesale and retail at Paris by the dealers in fancy woods, such, for example, as the ebony, amaranth, violet, Indian woods, ivory, &c.; and also by the toy, or inlaid ware, dealers. Its price varies from three or four, to ten or twelve sols per pound; the largest is always the dearest.

The service tree holds the place next in order to the box: it may be obtained both cultivated and wild; the last is the firmest, but both are tolerably well adapted to the graver, and we have only to guard against having it conveyed by water. In this case it is scorched as it were, a term made use of, though improperly, to designate certain white spots which are caused by the water, and which are soft, and of course ill adapted to the graver. It is necessary to its goodness, that a block appear of one uniform colour throughout, either brown or reddish; but this cannot be ascertained in the way in which boards of it are offered for sale, covered with dirt, &c. unless we wash it with a sponge and water, or give it a few strokes with a plane. The best way, however, is

only to buy it after it is cut up, when we can ascertain whether it be sound to the heart; and it may also be advisable to make a few strokes on it with the graver, to discover whether it cut sweetly—a practice indeed to be recommended before purchasing all kinds of woods.

We may now and then find pieces of service tree which are nearly as firm as the best box, and on which the finest work may be executed: unluckily, however, this wood, as well as those of which I am about to speak, is subject to the worms; and farther, as it is liable to crack or flaw, it can be little used for delicate engravings.

The pear tree is a wood on which all works are commonly engraved that require no great degree of delicacy. The wild pear, known by the name of sauvageon, as I have said, is harder and firmer than the other; its colour is reddish. The pear tree boards are often wavy, a circumstance which lessens its goodness. We may also estimate its goodness with respect to the scorching, by the same marks as laid down with respect to the service tree.

The apple tree is much in use for our art throughout Normandy; and may prove a tolerable substitute for the pear. The wood both of the apple and of the crab tree may be used, but that of the latter is preferable. The same is also to be understood, not only of the apple and pear, but also of all other woods; the wild species of which are firmer, and always better to engrave on, provided they be not knotty.

We may make use occasionally of the cherry tree, both cultivated and wild, and the last is better than the first.

These are the only woods which are best adapted and most convenient for engraving. Most of these may be purchased of the dealers in wood.

Some authors have asserted that the Chinese engrave their characters on a species of green ebony; but it probably possesses properties entirely wanting in the specimens we possess, and is better suited for the graver, as I have tried various sorts, and have always found them too hard, too dry, and subject to egrain. The Chinese have, however, two or three

other kinds of wood, of which we know nothing, whereon they commonly engrave: one of these, called rose wood, is very common in the province of Quangtung; it is hard, black, reddish, and shining after exposure to the air; and after planing nothing can be more beautiful to the eye; its veins are of the most beautiful fire colour, streaked on a base of gilded yellow. The Portuguese in India hold it in great request for the construction of chairs, tables, and other articles of household furniture. I am in possession of the handle of a mallet, handles of other utensils, and some frames made of this wood, and I have tried to engrave on it, but it is too dry, and is liable to egrain. It may, however, possess other properties in its native country.

The wood of the walnut tree is porous, and little adapted to our art. The cocoa nut shell and the lignum vitæ are too hard and dry, ivory the same, as is the case with the horns of the deer; it would require great patience to engrave on any of them; and it is of little use to employ and fatigue ourselves on substances so ill adapted to our purpose, when others of a nature more congenial so readily offer themselves to our hands. The oak, the beech, the yoke elm, and the elm, are not proper for engraving, though we may on emergency make use of the yoke elm. The willow, the lime, the fig, the birch, the elder, the alder, the aspen, the poplar, the chesnut, the fir, the acacia, the Indian wild chesnut tree, &c. are, as I have already said, too soft, and consequently by no means proper for our purpose. I have, however, engraved on the sycamore, a species of wood resembling the fig tree, which takes a good polish, and is sufficiently firm, sweet in the cut, not at all subject to egrain in making the strokes, and on the whole it may be made use of in tolerably delicate engravings, in case of need; but it is liable to be spongy, and that in such a way as to become soft if we often wash the block after taking off impressions. Amongst many kinds of wood on which we are enabled to engrave, such, for example, as the various heart-cherries, the plane, the cypress, the lemon, &c. all of which it is difficult readily to obtain, if we want them; we cannot reasonably include such in the number of those

which we ought to select for our species of engraving. The greater proportion of the woods which we obtain from the East Indies, or from America, are also not equally eligible for engraving; such are the palisante, the amaranthe, the violet wood, those of Brazil, of Fernambuco, of China, and many others. The cedar, the orange, and the lemon tree, are almost the only ones on which we can engrave with tolerable success. I have tried some of them, and they are almost the only ones of the fancy [précieux] woods which I have found adapted to the graver, amongst a great number on which curiosity has led me to make experiments.—*Vol. II. Chap. iii. page* 57.

No. VII.

THE MANNER OF PRINTING ENGRAVINGS IN CAMEO, BOTH WITH THE ROLLER AND THE PRESS; MACHINE MADE USE OF BY GEORGE LALLEMAN, PAINTER, IN PRINTING HIS; MODES OF CLEANSING ENGRAVED BLOCKS OF WOOD.

In order to print our Cameos, after having well prepared and brayed the colours of the various tints which we shall want, we commence our operations by taking impressions of the lightest, afterwards of the darker tint, and, finally, if it only consist of three blocks, of the browner or the outline; if of four, the still darker tint; and, finally, the outline. Nevertheless, if it be thought best, whether to soften the colour of the outline, or for any other valid reason, we may begin with the outline, use the intermediate shade or shades, and end with the lightest tint.

We may print a score impressions successively from one block or tint, taking care to keep them always moist, by laying one upon another as they are printed off; those first printed are now to be worked off on the second tint, still taking care to place them, as they come off, one upon another; and so of the rest. I am persuaded, however, that if we finish

the whole suite of blocks in each subject, before we proceed to another, our registering will be more just, and we shall have less to fear from the shrinking of the paper, by any little drying it may undergo.

We may make, if we choose, the lightest tint of our Cameo of a different colour from that of the original; but we must ever recollect, that the true Cameo can only arise from a succession of tints of the same colour, whether we make use of red, blue, yellow, green, bistre, or Indian ink.

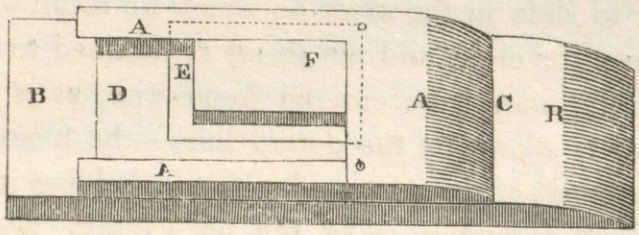
When there are points on the engraved blocks of a Cameo, to assist in making register, after inking the block, placing the paper on it, and pressing the points through it with the fingers, to form the proper holes, we take off impressions of the tint, with which we think proper to commence our work. To print a second tint, we take the impression already made, and place it on the second block, taking care that the points on it are carefully entered in the holes of the paper now to be used: the same process must be followed with the third; and also, should there be one, with the fourth block.

In order to avoid the ill consequences which would arise from the enlargement of the holes made in the paper, by successive impressions, and which would thus cause the risk of throwing our work out of register, it will be necessary to make use of a paper rather stout, to afford some degree of resistance. When there are no points on the blocks, our paper need not be so thick; and here we readily perceive that by the same means we can use the common printing press in striking off our Cameos, and make our re-entries sufficiently just by the aid of the points of the frisket. I should not be disposed, however, to recommend the use of this kind of press, because the tympan necessarily resting on the paper and the engraved block alone, it is indubitable that the great masses of the colours must always come off snowy, and that the hand and the roller will print them much better.

The best and the most certain, as well as the most convenient and ready manner, for printing the large blocks of a Cameo, or, indeed, of

the small ones, is to employ the rolling press, that is used by the copper-plate printers, and a chase invented, as I have said, by N. Le Seueur, of which the following is a description and figure.

This chase is to be constructed of three pieces of wood pinned together, as is represented at A, and should occupy all the breadth of the table of the press, B, and be of the same thickness as the blocks of the



Cameo; its head should be sloped gradually from about one half of the letter A towards, and up to, the extremity C, where it should only be one line in thickness. The two sides should be at least two inches broad each, and about two feet long, more or less.

It is of consequence, if we are not handy at adjusting the press, to have that done by a copper-plate printer, after which, in order to make use of the chase described, we first place on the table, B, already placed in the press, a piece of fine even woollen cloth, as at D, which should be as broad as the table, and about the length of the chase. Upon this cloth it will be advisable to place a sheet of blank paper, E, which we must take from amongst those already wetted, on which we mean to print the work: this sheet must remain there so long as it continues clean enough not to soil the impression by any ink it may have collected during the operation, the which would in turn soil the backs of the succeeding ones, in which case it must be replaced by another. On this sheet, E, we place the chase, and on its top the blankets necessary to the operation. The press is next turned, so as to cause the chase to advance between the rollers, till the sloping part is so far passed, that

we are sure it is so firmly fixed on the table, as to be unable to shift its place. After this, the blankets are to be turned over the roller of the press, as is done in the ordinary way, when a copper-plate is placed on the table to be printed.

The chase thus disposed of, and ready to act, we cause the first block to be beat with ink, and, whilst this is doing, placing ourselves opposite the end of the table, we, with one hand raise the left side of the chase a little, in order to slide in the sheet on which we mean to take our impression, between the chase and the sheet, E, destined to remain. It is necessary that the margin be covered frame-wise, as is done with the sheet E, and as is shown by the dotted lines—the block is then to be taken from the hands of the person who beat it, holding it by the edges, which remain after sloping away the unnecessary wood round the border of the engraving. If it has been thought proper to make the square of the block larger than the design, we turn the engraved surface downward, in order to hold it the more easily, and place it on the sheet exactly in the angle of the chase, as at F. The blankets are now to be replaced on the upper surface of the whole, the press turned, still holding the block with the hand till it become effectually squeezed by the rollers, when we must remove to the other side, and, when it has come through, the blankets must be turned up, and the block gently taken from the face of the impression, to be given to the hand of the assistant, to ink anew. The chase must now be raised a little, the impression withdrawn, and a blank sheet put in its place, to follow the same process with others.

In order to make greater speed, when it is necessary to print Cameos, it will be advisable to employ three people; one to arrange the sheet and the block in the chase, the second to put the ink on the block, and the third to turn the press. At any rate, there must always be two; one for the sheet and the block, and the other to ink the block and turn the press.

It will be easy, after taking off a proof of one of the blocks, to replace it, with its margin under the chase, and to adjust the outline of the block

exactly on the sides of the angle of the chase, in order to place the outline of another block precisely on that already worked off, and so of the succeeding ones. By this means the registering will be perfectly just, unless there has been an error in tracing off the outline of the design, or in engraving the blocks.

If the proof come off too feebly printed, it will be necessary to paste a stout waste sheet, or a piece of cloth, on the back of the block, taking care that it does not exceed the block in size, or else the effect will be destroyed. If one place alone be imperfectly printed, whilst the rest of the impression appears as it ought, we need only paste a piece of paper on the back of that part of the block, and it will then produce the proper effect.

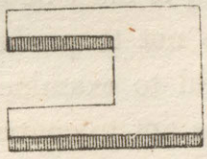
Now as wood is apt to warp, if our successive blocks are not found to fall into register, they must be examined by the compasses; and if any one is found to be shortened, or elongated, it will be necessary, in the first case, to wet it, or put it into a moist place till it shall return to its proper size—in the second, it must be exposed to the air, or held to a fire, at such a distance as not to produce too great an effect on it. Above all, we must be careful to examine whether it does not proceed from the paper itself, which is apt to contract, or to expand, as it dries, or gets too moist.

In order to ink the blocks commodiously, we may make use of a large block, hollowed out in this manner, and of this figure, about three

or four inches in thickness. The depth of its channel, G, should be only about half an inch; and, in order that its two raised edges shall receive none of the ink, when the surface of the block, H, is beat with the ball,

they should be bevilled away, as at I. A stroke of a mallet will serve to fasten, or loosen, the quoin, K. Hence the manner of fastening and using the block in it is easy to be comprehended, without any further instruction. We can also firmly fasten the whole piece by its ends to the table, if we choose, by the two screws, as at L, so that the block shall not be raised when beat by the balls.

It ought to be observed, that, as the opening of the chase just now described, is adapted to the purpose of printing large Cameos, nearly the size of the vacancy between its two branches; or of a succession of blocks for paper hangings, as was done by the Sieur Chauvau, engraver on wood, it will become necessary, if we choose to make use of it in printing small blocks, whether in Cameo or otherwise, to fit to it a smooth piece of wood, of precisely the same thickness, and of nearly the whole length of its opening; and this piece must, in like manner, have an opening in the middle, as represented here, in order to form a frame



wherein we may place our little blocks, in the same manner as we did the larger ones. All this is done for the purpose, that the rollers of the press may act equally on the whole, without inclining more on one side than on the other; as otherwise, the impression could not be correct, and also that the rollers themselves may not be strained, or spoiled; circumstances which, of course, it is of consequence to avoid.

George Lalleman, painter, took great pains to discover modes of printing the Cameos of his own composition, both correctly and readily. After being at great expense in constructing many machines, which did not answer the purpose, he caused one to be made in the form of that used in letter-press printing, of a particular structure, and which cost him fifteen hundred livres, before it was ready for use. It was composed of

three screws and three platens, all of which moved with one single pull of the bar. He could print by means of this invention, and at the same pull, three different blocks or re-entries, separately one from the other; but this machine did not yet answer the purpose perfectly, as the masses of the Cameos did not come off sufficiently sharp and neat.

He now proceeded to construct another press, nearly like that used in printing copper-plates. It was composed of three tables and six rollers; by turning the cross or handle he easily printed three blocks or re-entries, separately one from the other. He hoped to gain much in the sale of his Cameos, and consequently spared neither pains nor expense to render his machine perfect: it cost him at least as much as the preceding one; and he had the satisfaction to find it attended with all the success, when in action, which he could desire: this is sufficiently proved by the justness of the re-entries of his Cameos.

He employed from the first four hands to work at this machine; each block occupied one to supply it with ink; and immediately after this was done, and the paper placed underneath, the fourth turned the cross of the press, and struck the three impressions at the same turn, as already said: but all this expense, however, was unproductive—for want of sale. I believe too, that this machine, as well as the preceding one, was seized for the debts contracted by their inventor, and that they remained in the hands of those who seized them—because they could not dispose of them. Thus much is certain, that my late father saw them more than eighty years ago, then greatly shattered, in the possession of a private individual, near the Church of the Magdalen; and that he did not feel inclined to purchase them, as they would have cost him too much to put them in a state fit to use.

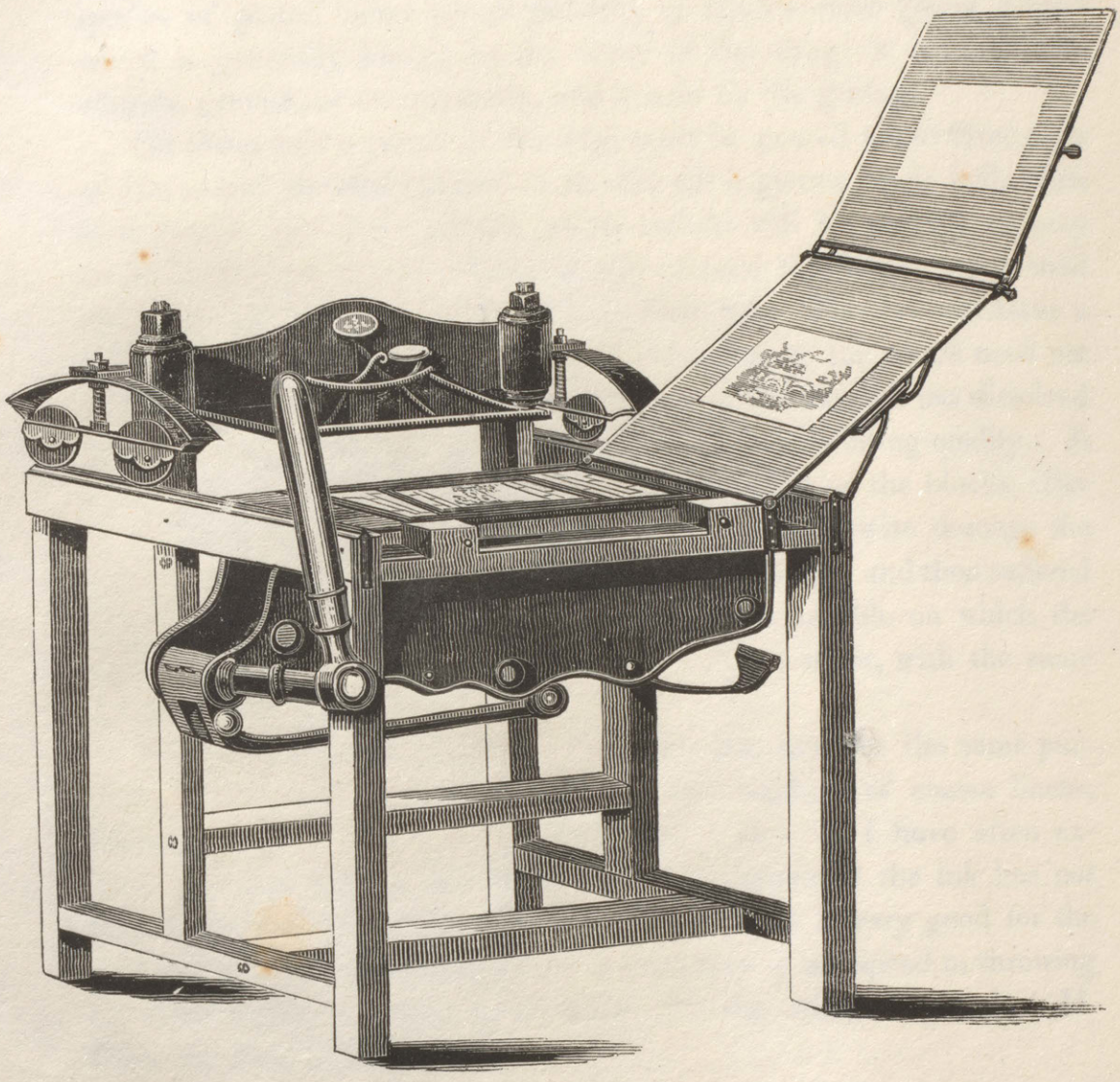
They generally make use, in printing offices, of hard and soft brushes, for the purpose of cleansing the forms of letter, and engravings on wood. I should recommend, in order to preserve the engravings, that no other be made use of but one constructed of soft hairs, cut short, like those of a shoe brush, as by this means we shall avoid battering, or turning

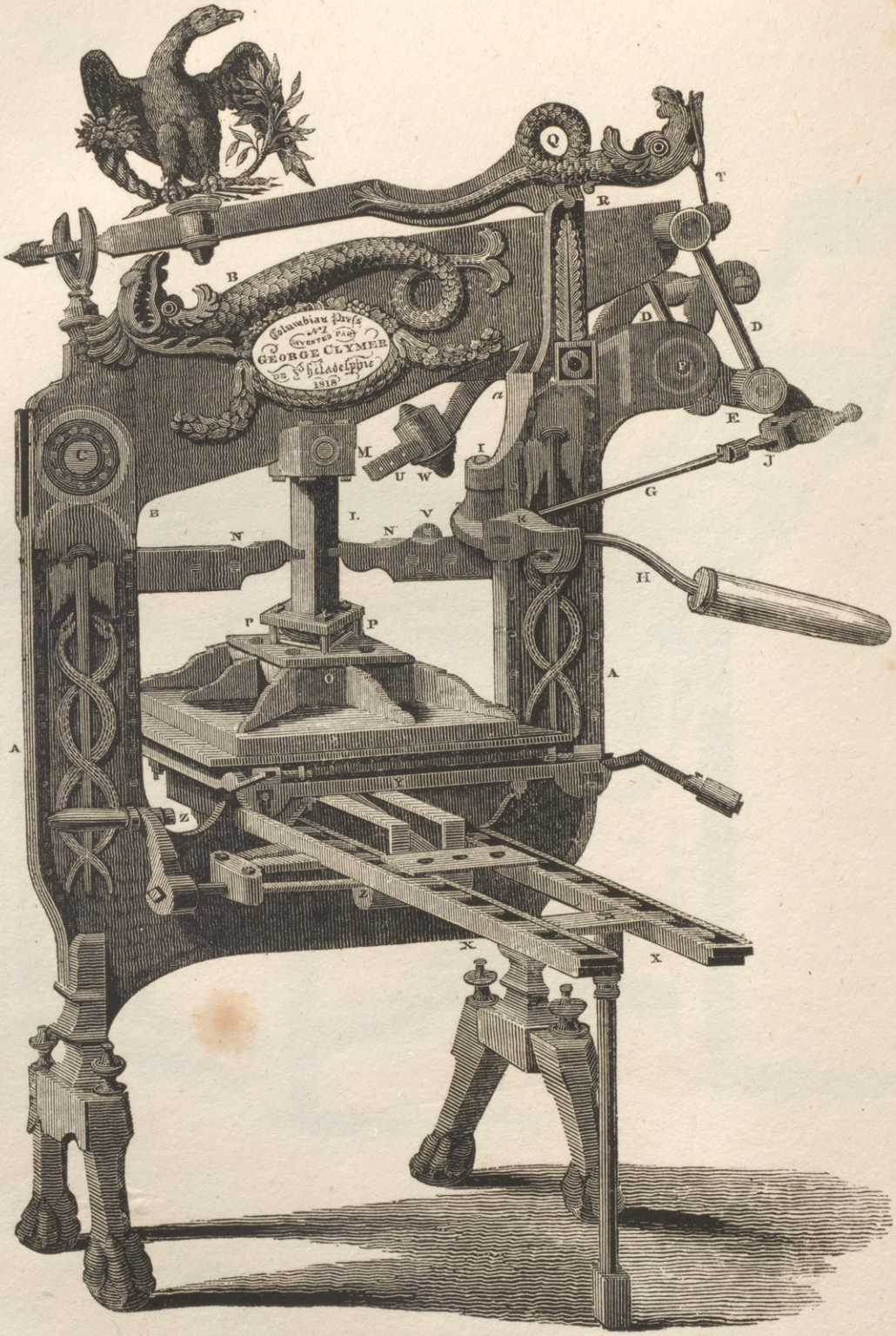
awry, the delicate lines or points of our blocks. I always make use of a brush of this kind, and by this means preserve my blocks extremely well.

With respect to the material to be used in cleansing forms, or engraved blocks, after printing from them, that which is made use of is a species of potash putty [*potée potasse*], or fuller's earth [*terre grasse*] which is generally known by the name of the drug: it is commonly whitish, greyish, or even reddish, and is sold by the grocers.

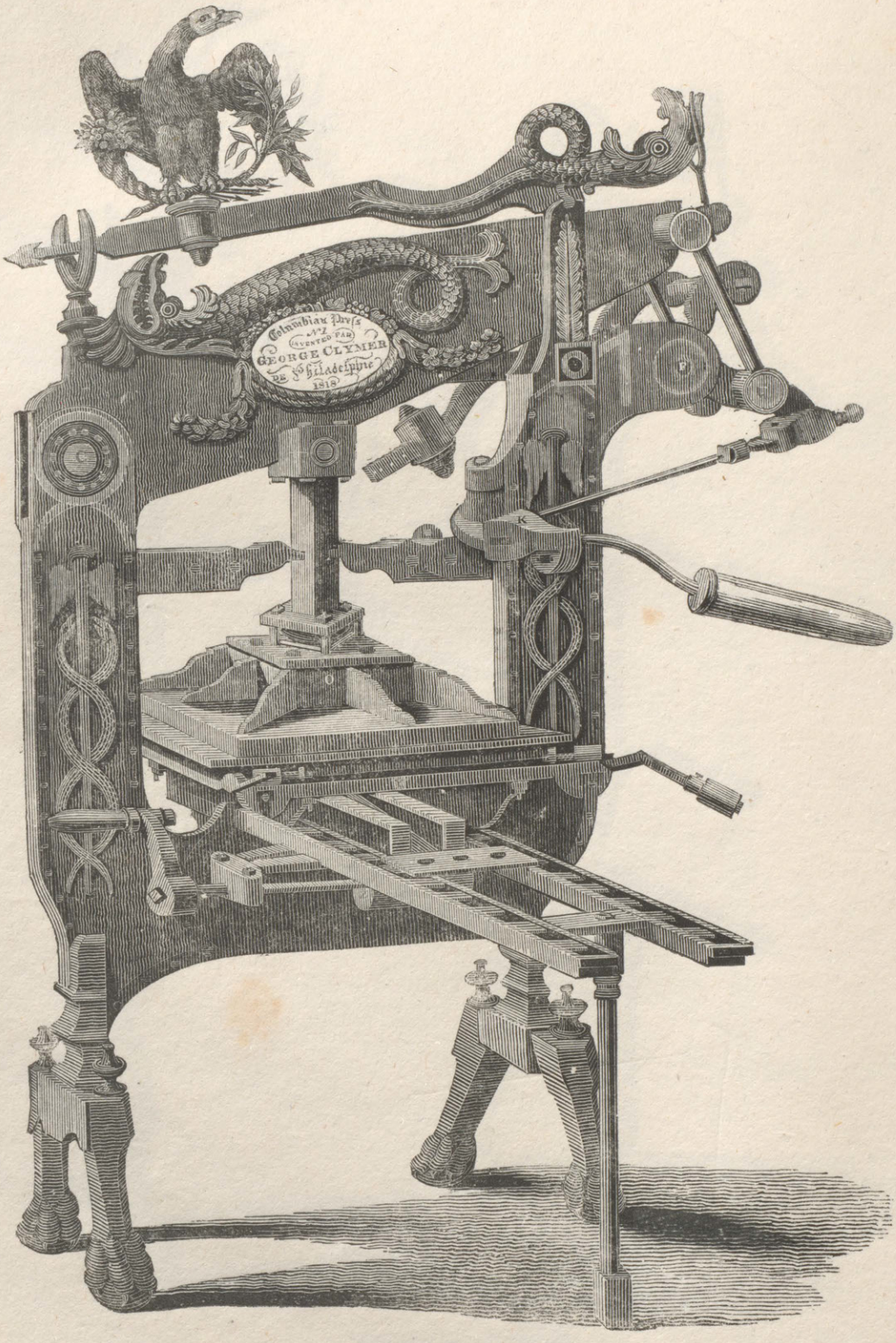
On about half a pound of this drug must be poured about three pints of water, and the whole placed on the fire till it gives a single boil, when it is ready; and if we please, which indeed will be proper, we may strain it through a linen cloth: it will cleanse the blocks when used either hot or cold, but much the best when hot. This lye will serve a long time before there is any need of changing it; the which need not be done till it becomes thick by the quantity of ink which it has dissolved from the blocks, or till we perceive that it has lost its biting quality. It will also be necessary carefully to throw clean water on the blocks, after having washed them with the lye, as this might otherwise damage the engraving; it must forthwith be cleansed with a sponge, and then suffered to dry. We ought, occasionally, to cleanse the marble on which the ink is distributed, and also the brayer, in like manner, with the same lye, lest the ink should harden.

As a substitute for this drug, we make use, and for the same purposes, of the lye commonly used by the bleachers of coarse linens, warming it also—even warmed soap and water, as I have often experienced, will cleanse the blocks very well, provided the ink has not been long dried on them. The black (soft) soap is very good for the purpose; but, as it is very active, it is necessary to use speed in throwing on clean water, as ought to be done with the other soap.—*Vol.* II. *Chap.* iii. *Sect.* 2. *Page* 366.





COLUMBIAN PRESS.


Columbian Press
INVENTED BY
GEORGE CLYMER
IN Philadelphia
1818

No. VIII.

THE COLUMBIAN PRINTING PRESS.

THIS Press produces the impression between two flat surfaces, technically termed the table and platen, made planes, perfect as art can produce; it is worked by a bar, as in presses of the old construction; but attached to the off cheek, instead of being applied to a perpendicular Screw, or Spindle. It is connected with a Compound Lever, which produces a power upon the platen equal to any that can possibly be wanted in a Printing Press; and as the machine is made of iron, and of great strength, there does not appear a probability of any part failing.

The Inventor, Mr. George Clymer, lately from Philadelphia, in America, has received many testimonials in its favour, from Printers of the highest respectability, who have used it.

No. IX.

RUTHVEN'S PRINTING PRESS.

IN giving some account of different improvements in Printing Machines, it would not be an act of justice to Mr. John Ruthven, of Edinburgh, if I omitted mentioning his Press.

It is of a different construction from any other that I am acquainted with—the table, on which the types, &c. are laid, is fixed; and the platen is brought over the form, of which it runs clear, by means of two springs, whose power gives way to the pull, and when that ceases they again raise the platen.

This Press possesses great power, and many valuable properties, of which I can speak with much certainty, as the whole of the Decorations in this work were printed with it; and if any thing were required in its praise, it would only be necessary to state, that the Inventors of the two last new Presses in use, told me separately, that it was superior to every Printing Press, excepting their own inventions.

The Engravings of Mr. Rutt's, Mr. Clymer's, and Mr. Ruthven's

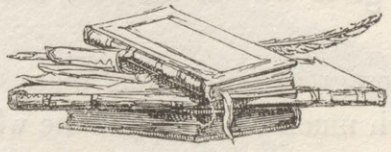
Machines, not being my property, cannot be destroyed with the other decorations; but as they do not elucidate any mode of Decorative Printing, and are introduced only as explanatory of the machines, it can be no breach of my promise; as every Decoration illustrative of Printing in Colours, with the finished engraving by Nesbit, have been destroyed

No. X.

BLACK INK.

Balsam Capivi.	9 oz.
Best Lamp Black.	3
Prussian Blue.	$1\frac{1}{2}$
Indian Red	$\frac{3}{4}$
Turpentine Soap Dried . .	3

Ground on a Marble or Stone Slab with a Muller, to an impalpable fineness. These ingredients will make rather more than 1lb. in weight, and form the same Ink that the first part of the work is printed with; it has received the unequivocal approbation of the Pressmen who have used it, as working perfectly free and clean, and washing easily off the types; as much or more so, than any strong Inks they had ever used, and they had been accustomed to Fine Works.



ILLUSTRATIONS.

SUCCINCT DESCRIPTION

OF

THE ILLUSTRATIONS.

FEMALE AND A BOY.

DRAWN BY J. THURSTON.—ENGRAVED BY C. NESBIT.

THIS subject has been engraved some years, and there has been a small number of it printed before; but it has never been introduced into any work. It is now given for the purpose of showing the effect of Burnt Umber, as the colouring matter of a printing ink.

FEMALE FIGURE.

DRAWN BY W. M. CRAIG.—ENGRAVED BY J. THOMPSON.

THIS subject has also been engraved some years, but, with the exception of a few proofs, was not printed till the present time.

It is printed with ink made of Indian Red; and is given for the purpose of showing the effect of that colour, as a variety that may be used for printing ink.

A SYBIL.

DRAWN BY J. THURSTON.—ENGRAVED BY G. THURSTON.

To shew the effect of engraving on wood, in imitation of a pen and ink drawing upon coloured paper with the lights put in, I have given this subject, printed with brown ink and a tinted ground, the lights being cut out. The ground is Burnt Umber, much diluted with varnish.

FEMALE STREET SWEEPER AND CHILD.

A Sketch from Life.

DRAWN BY W. M. CRAIG.—ENGRAVED BY BRANSTON.

THIS subject was introduced for the purpose of showing a human figure, treated as a slight drawing, and printed with three blocks.

I have given impressions from the blocks separately, and combined, to show the process of printing with a suite of blocks; and this number will show the principle as well as if there had been more.

It is printed with an ink composed of Rose Pink, Chrome Yellow, and Black. The middle tint was first printed, then the deepest, and lastly the lightest.

HEAD PIECE.

DRAWN BY T. WILLEMENT.—ENGRAVED BY BRANSTON.

THIS Head Piece was designed to show a slight sketch of printing; in the centre is Ruthven's Press at work; on one side is a Frame and

Case, with a man composing; and on the other side an Imposing Stone and Frame, with a man correcting a Form.

It is introduced in pp. 1, 34, and 60, printed with different coloured inks. The impression at p. 60, was printed by Mr. Johnson.

There are three blocks.

HEAD PIECE.

A Composition.

DRAWN AND ENGRAVED BY G. W. BONNER.

This Head Piece is composed of three blocks; and is introduced at pp. 18, 48, and 67, printed with different coloured inks The impression at p. 67, was printed by Mr. Johnson.

BAS-RELIEF.

DRAWN BY W. HUNT.—ENGRAVED BY BRANSTON.

This piece of Sculpture is No. 73*, in the sixth room of the Gallery of Sculpture at the British Museum. It is thus described in the Synopsis.

"A bas-relief, representing a female Bacchante dressed in thin floating drapery, through which the beautiful forms of her body are perfectly apparent. With one hand, which is held somewhat above her head, she holds a knife, and at the same time secures a portion of her robe, which is blown behind her; with the other hand, which is held downward, she carries the hind quarters of a kid. This piece of Sculpture was anciently one of the ornamental figures on the triangular base of a candelabrum."

There are four blocks.

STATUE OF THESEUS.

DRAWN BY W. HUNT.—ENGRAVED BY W. HUGHES.

This Statue, which belonged to the Earl of Elgin, is in the fifteenth room of the Gallery of Sculpture at the British Museum, and is No. 71.

"A Statue of Theseus, the Athenian hero; he is represented half-reclined on a rock, which is covered with the skin of a lion. Theseus, it is well known, professedly imitated the character of Hercules; and it is worthy of remark, that the attitude here given to Theseus is very similar to that of Hercules on some of the coins of Crotona. This wonderfully fine Statue originally occupied a place in the east pediment of the Parthenon, next to the horses of Hyperion."—[*Synopsis of the Contents of the British Museum*, 1818.]

There are five blocks.

A BUST.

DRAWN BY W. HUNT.—ENGRAVED BY G. W. BONNER.

I cannot do better than transcribe from the publication of the British Museum, the description of this Bust, which is placed in the third room, and is No. 23.

"We cannot too strongly express our admiration of this very spirited and masterly piece of Sculpture; its general character evidently shows that it represents a head of one of the Homeric heroes. Many attempts have been made to ascertain the particular person whom it was intended to represent, but hitherto without success. It is considerably inclined to the right, and is looking upward, with a countenance expressive of the deepest anguish both of mind and body. The hair of the head, though not long,

is in bold and distinct masses, and the beard is very short and close to the face.

"We may remark a great similarity between the character of this head and that of Menelaus, in the French collection, supposed to have belonged to a group representing Menelaus supporting the dead body of Patroclus. We are not, however, inclined to think that the head now before us was intended to represent Menelaus, as the head of that hero is, in the instance we have just mentioned, as well as in every other with which we are acquainted, covered with a helmet, and the beard is much more ample.

"This head was found by Mr. Gavin Hamilton, in the year 1771, in that part of Hadrian's villa, called the Pantanella. A similar head, but of inferior execution, was found near it, and was deposited in the Vatican. The nose, and a small portion of each lip, are modern; as are also part of the lobe of the left ear, and a tuft of hair on the top of the head. The bust on which the head is placed, is not antique.

"Height, 1 foot $9\frac{1}{2}$ inches."

AN ANCIENT TOWER,

Near Denbigh, North Wales.

DRAWN BY J. VARLEY.—ENGRAVED BY BRANSTON.

This subject is composed of seven blocks, and printed with Sæpia, to represent a slight drawing.

The first block is printed light and washy, for the first tint of the sky, and covers the whole surface, except where the whites are cut out; the second block gives the deeper clouds and parts of the lights in the buildings and ground; the other blocks follow with deeper and deeper shades, till they become nearly black.

RUINS OF KIRKSTAL ABBEY, YORKSHIRE.

DRAWN BY W. M. CRAIG.—ENGRAVED BY J. LEE.

The drawing of this subject was thought to be favourable to the mode of printing in colours, on which account it was introduced.

The name will be familiar, on account of its being the place where the noted and popular freebooter, Robin Hood, died, and was buried.

There are seven blocks, printed with an ink a little redder than Sæpia, and advancing progressively from the lightest tints to the greatest depth of colour.

BRIDGE AND LANDSCAPE.

A Composition.

DRAWN BY J. THURSTON.—ENGRAVED BY BRANSTON.

This subject was originally meant to be printed in colours, and inserted in the Prospectus, as a vignette, to serve as a specimen of the mode of printing intended to be produced in the work.

Mr. Thurston analyzed his drawing on the blocks, but he was not satisfied with the effect produced when printed in colours; and I could not induce him to finish it.

It is now introduced, with some slight alterations, printed with Sæpia. There are eight blocks.

It will be perceived that the subjects printed with Sæpia, are not of the same colour: I have found, that in purchasing the raw material, the tone varies materially; and this will account for the different appearance.

COTTAGE AND LANDSCAPE.

DRAWN BY J. VARLEY.—ENGRAVED BY J. MARTIN.

It was intended, in this design, to give an imitation of a drawing in Indian Ink, to which it was thought this mode of printing was applicable.

It was printed with black ink, the lighter shades diluted with varnish.

The lightest tints in the sky and other parts, were printed first, and gradually advanced to the greatest depths, which are black printing ink, without being reduced.

There are nine blocks.

PASSAGE BOATS.

DRAWN BY A. W. CALLCOTT, ESQ. R.A.
ENGRAVED BY R. BRANSTON, JUN.

This is a fac-simile of a pen and ink sketch from the original study for one of the two finest paintings executed by Mr. Callcott, now in the possession of Sir John Swinburne, Bart.

It was engraved by Mr. Robert Branston, Jun.; and may be looked on as a specimen of the abilities, in the execution of works of this description, of a promising young artist.

There are seven blocks; and it is printed as an imitation of an impression of the outline, with the sky and water washed in by Mr. Callcott.

RIVER SCENE.

DRAWN BY A. W. CALLCOTT, ESQ. R. A.
ENGRAVED BY G. W. BONNER.

This is copied from the original pen and ink study, of the other finest picture of Mr. Callcott's painting, which he obligingly permitted me to have engraved for this work; now in the possession of Sir Willoughby Gordon, Bart.

Mr. Bonner, a pupil of Mr. Branston's, has succeeded in preserving the spirit and character of the original Sketch.

There are five blocks.—The outline, one; the sky, water, and shadows, four.

GLAZED TILE.

DRAWN BY T. MOULE.—ENGRAVED BY W. C. WALKER.

There are two blocks; the yellow was printed, as a ground, over the whole surface; the red was an engraved block, and printed over the yellow, by which means there was no trouble in making the blocks fit; although, perhaps, by engraving both the blocks, a closer imitation of the colour of the tile might have been produced.

The arms are those of King Edward the Confessor.

INITIAL LETTER B.

From the Psalter of 1457.

DRAWN BY R. THOMSON.—ENGRAVED BY J. BYFIELD.

The principal object in giving this curious specimen of ancient printing, which, according to the received account, was produced a few

years after the art was invented, was to show the skill that the printers had then attained in printing with coloured inks.

In looking at this splendid book, as well as at the Bible which is known by the designation of "The Mentz Bible without date," we are struck with the beauty of the workmanship, and the superiority of the drawings, as well as the engraving, over the productions of Caxton.—His really look like the productions of an infant art, although they were subsequent to the others—those appear like the productions of an art that had nearly arrived at maturity.—See p. 51.

ORNAMENTAL LETTER B.

DRAWN AND ENGRAVED BY BRANSTON.

This letter was executed to show that large ornamented letters might be introduced into books, printed at the type press in colours; or with different shades of the same colour as cameos; and also to show the introduction of Gold, by means of the printing press.

The letter was printed by Mr. Johnson—the Gold by Mr. W. Blanchard.

EARL SPENCER'S ARMS.

DRAWN AT THE HERALDS COLLEGE.

ENGRAVED BY J. BERRYMAN.

The yellow is chromate of lead, shaded with burnt Terra de Sienna; the red in the quarterings is vermilion; the scroll, bonnet of the coronet, &c. carmine; the garter, Prussian blue and carmine; and the black is printing ink. There are six blocks.

This subject will be found at the commencement of the volume, as the Dedication.

THE WITCHES—FROM MACBETH.

DRAWN BY THE LATE J. THURSTON, ESQ.
ENGRAVED BY G. THURSTON.

This subject represents the Witches in Macbeth, according to Mr. Thurston's idea of their character; and was engraved by his son when quite a youth, in imitation of a pen and ink drawing.

It was at first intended to be printed with a tinted block, and the lights cut out; but more blocks have been added, to give the flesh distinct from the garments, as well as from the back ground.

There are six blocks—the outline and five others.

ETRUSCAN VASE.

DRAWN BY W. HUNT.—ENGRAVED BY W. HUGHES.

This Vase is looked on as one of the finest specimens of the Hamilton Collection, in the British Museum.

It is placed in the centre, on the top of the glass case in the middle of the Collection, on the right, going to the Print Room.

The printed impression consists of a suite of seven blocks; and has been held to be one of the best representations of these antique Vases, that have been published.

CARNATION.

DRAWN BY J. P. NEALE.—ENGRAVED BY H. WHITE.

There are seven blocks.

1. Light green, which is diffused over the stalks, leaves, and buds, composed of Antwerpt blue and chrome yellow. The ends of the lower leaves are burnt Sienna.

2. Antwerpt blue, glazed on the first block, with the lights cut out at the joints, buds, &c.

3. Dark green in the stalks and leaves, Prussian blue and chrome yellow.

4. Shade in the flower, black ink and Sæpia.

5. Purple in the flower, Prussian blue and lake.

6. Flower, carmine.

7. Flower, carmine, a little deepened.

As some gentlemen may be desirous of embellishing their works with imitations of finished drawings, I have given this flower heightened with the pencil, in order to show how my inks will bear water upon them.

BUTTERFLY.

EQUITES ACHIVI. *Machaon.* (Swallow Tail.)

DRAWN BY J. P. NEALE.—ENGRAVED BY BRANSTON.

This representation of the finest species of English Papilio, is given on a branch of Fennel, on which it feeds.

There are seven blocks.

1. Shade in the stem of the plant, Prussian blue and chrome yellow; blue in the under wings, Antwerpt blue.

2. Fennel plant, Antwerpt blue and chrome yellow; the umbel of the plant a little more yellow. The eyes in the wings of the Butterfly, vermilion.

3. Dark yellow in the wings, Indian yellow.

4. Light yellow in the wings, and in the flowers of the plant, chrome yellow.

5. Brown in the Butterfly, burnt Sienna, rose pink, Indian red, and black ink.

6. Deep shaded brown in the Butterfly, the same colours, with the addition of a little black ink.

7. Darkest colour in the under wings, the same colours, with a little more black ink.

For the Specimen from which the drawing was made, I beg leave to return my thanks to Mr. Hatchett, of the Bank of England, on account of the kind and friendly manner he entrusted me with a rare and scarce insect from his Cabinet.

ROSE HILL PARROT.

From New South Wales.

DRAWN FROM LIFE BY J. P. NEALE.—ENGRAVED BY BRANSTON.

This beautiful, and in England, scarce bird, took its name from a hill, called Rose Hill, in New South Wales, on account of the numbers of them resorting to it. Mr. Dalziel, of Princes Street, Rotherhithe, politely gave permission for a drawing to be made, which Mr. Neale undertook to execute.

There are seven blocks.

This was a subject that I thought peculiarly applicable to the process, and which would prove one of the happiest efforts in the book; and I was particularly anxious that it should be so; for the owner of the bird is a

particular friend, and a near relation to myself: but, after all my anxiety, the result is contrary to my wishes; and in my opinion, it is the greatest failure that is in the volume.

I am perfectly satisfied, that a bird might be printed in its natural colours, equal, if not superior, to any other subject; and I have to regret, that, in the present instance, it is not accomplished.

TITLE PAGE.

DRAWN BY T. WILLEMENT.—ENGRAVED BY BRANSTON.

In a work of this description it was thought appropriate to introduce an ornamental title page, printed in colours.

It consists of eight blocks, with the additions of the title of the book printed in gold in the centre.

TYGER AND LANDSCAPE.

A Composition.

DRAWN BY W. M. CRAIG.—ENGRAVED BY BRANSTON.

In this composition there is a suite of thirteen blocks. The part that each block was to print, was drawn on the wood by Mr. Craig.

The outline block took in every part of the subject; it was printed in sæpia, as a tint that would blend with other colours, without affecting them, and possessing sufficient depth to give many of the shades.

In printing the other blocks, care was taken to go on progressively from the deepest to the lighest, so that the lighter tints coming over the deeper, glazed them, and softened down many harshnesses, that would have occurred if the deepest tones had been printed last.

COTTAGE AND LANDSCAPE IN COLOURS.

DRAWN BY J. VARLEY.—ENGRAVED BY J. THOMPSON.

In this subject there is a suite of fourteen blocks. It commenced with printing the clouds, which are the Neutral Tint; then the blue sky, with Antwerpt blue, and advanced progressively to the darkest shades: the trees were glazed with green after the deepest parts were printed. From having to match the colours of a drawing in so many tints, which pass over each other, it is not practicable to give the precise composition of the colour that each block produced; nor would it be possible to trace them in the impression.

MERCY.

Illustrative of Collins's "Ode on Mercy."

PAINTED BY W. H. BROOKE.—ENGRAVED BY G. W. BONNER.

This subject is given by the present Proprietor of this work, in addition to every thing that had been previously promised.

It consists of a suite of twenty-nine blocks, in one of which two colours were introduced, making thirty distinct tints in the working: this number, including the different tints produced by the blocks passing repeatedly over each other in a partial way, make it the most complex subject that was ever produced at the Type Press, that has come within my knowledge.

The tints in the painting were analyzed and separated by Mr. Bonner: and it went to press before the whole were completed: this may account, in some degree, for a deficiency of mellowness (if I may be allowed the term in printing) and finish, when so many blocks were used; but after printing nineteen, the number that was thought would complete it, additional blocks were found necessary—and additional blocks were added.

In producing a picture, a colour may be printed out; but in printing, as I have observed before, it is fixed: this may in some measure, account for the apparent harshness in this subject; looking at the great number of blocks employed to produce the effect.

I have no doubt but what this subject would have been greatly superior in effect, if the engraving had been completed before it was put to press.

With respect to the small paper copies, there is another observation I wish to make:—when I first showed specimens of the work, it was doubted that they were printed—in subsequent stages, it was denied that it was possible to produce by means of the Printing Press only, the subjects that were shewn—I felt it due to myself to prove, that there was no deception—in consequence I printed the illustrations on plate paper, which is without size; and the large paper copies on Indian Paper, neither of which can be drawn upon and coloured, without a great deal of trouble and loss of time; this resolution to obviate all doubt, has led to a deterioration of the small paper copies; for I have found in practice; that a fine, hard sized, paper will receive (when dry) a much harder impression than plate paper when dry; and I regret that I did not use a fine, stout, hard sized paper, for the small copies of this design.

It would be unnecessary to attempt to enumerate the tints of the blocks, for they are so blended together, that it would answer no purpose.

JERUSALEM DELIVERED.

DRAWN BY J. THURSTON.—ENGRAVED BY C. NESBIT.

This subject has been pronounced, by competent judges, superior to any production of the art that has preceded it.

It may be questionable how far it adds to the fame of Nesbit, but it will prove that his powers of handling the burin remain unimpaired.

CAVE OF DESPAIR.

From Spencer's Faëry Queen.

DRAWN BY THURSTON.—ENGRAVED BY BRANSTON.

This and the preceding subject have been executed for the same object; viz to show the present state of the art of engraving on wood in England.

Both the engravers knew that each was producing a rival subject—each had the choice of his subject and the artist to design it—Nesbit's was first engraved; and he had the assistance of Mr. Thurston's observations in his retouchings: Mr. Branston's subject was delayed, and the decease of Mr. Thurston prevented a similar benefit; but, in return, Mr Branston superintended the printing of his production, which rendered the advantages nearly equal.

I believe they are the two finest specimens of engraving on wood that were ever produced.

ODE TO MERCY,

BY

WILLIAM COLLINS,

ILLUSTRATIVE OF THE ANNEXED DESIGN,

DRAWN BY W. H. BROOKE, ENGRAVED BY G. W. BONNER.

STROPHE.

O Thou who sit'st a smiling bride
By Valour's arm'd and awful side,
Gentlest of sky-born forms, and best ador'd:
Who oft with songs, divine to hear,
Winn'st from his fatal grasp the spear,
And hid'st in wreaths of flow'rs his bloodless sword!
Thou, who amidst the deathful field,
By godlike chiefs alone beheld,
OFT WITH THY BOSOM BARE ART FOUND,
PLEADING FOR HIM THE YOUTH WHO SINKS TO GROUND:
See, Mercy, see, with pure and loaded hands,
Before thy shrine my country's genius stands,
And decks thy altar still, though pierc'd with many a wound!

ANTISTROPHE.

When he whom ev'n our joys provoke,
The fiend of Nature join'd his yoke,
And rush'd in wrath to make our isle his prey;
Thy form, from out thy sweet abode,
O'ertook him on his blasted road,
And stopp'd his wheels, and look'd his rage away.
I see recoil his sable steeds,
That bore him swift to savage deeds,
Thy tender melting eyes they own;
O Maid! for all thy love to Britain shown,
Where Justice bars her iron tower,
To Thee we build a roseate bower,
Thou, Thou shalt rule our Queen, and share our Monarch's Throne!

JERUSALEM DELIVERED,

BY

TORQUATO TASSO;

DESCRIPTIVE OF

RINALDO AND ARMIDA

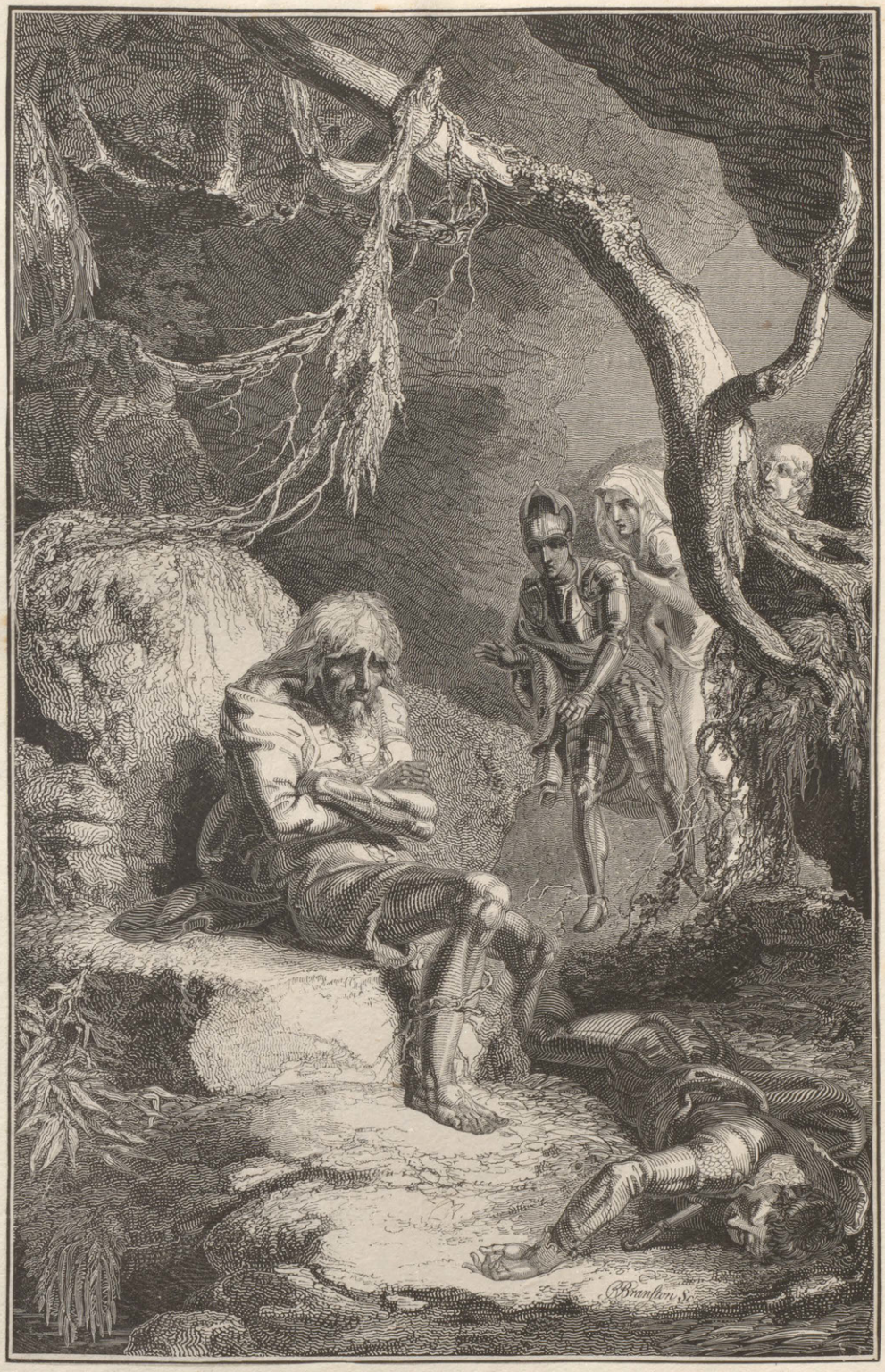
IN THE ENCHANTED GARDENS:

ILLUSTRATIVE OF THE ANNEXED DESIGN,

DRAWN BY THE LATE J. THURSTON, ENGRAVED BY C. NESBIT.

See the damsel and the christian knight.

There sat Armida on a flowery bed;
Her wanton lap sustained the Hero's head:
Her opening veil her ivory bosom shew'd;
Loose to the fanning breeze her tresses flowed;
A languor seem'd diffused o'er all her frame,
And every feature glow'd with amorous flame.
The pearly moisture on her beauteous face
Improv'd the blush, and heighten'd every grace:
Her wandering eyes confess'd a pleasing fire,
And shot the trembling beams of soft desire.
Now, fondly hanging o'er, with head declin'd,
Close to his cheek her lovely cheek she join'd.
While o'er her charms he taught his looks to rove,
And drank, with eager thirst, fresh draughts of love.
Now, bending down, enraptur'd as he lies,
She kiss'd his vermeil lips and swimming eyes:
And from his inmost heart he heav'd a sigh,
While to her's his parting soul would fly.


R. Branston, Sc.

STANZAS DESCRIPTIVE OF

THE CAVERN OF DESPAIR;

TAKEN FROM BOOK I. CANTO IX. OF

THE FAËRY QUEEN,

BY

EDMUND SPENSER:

ILLUSTRATIVE OF THE ANNEXED DESIGN,

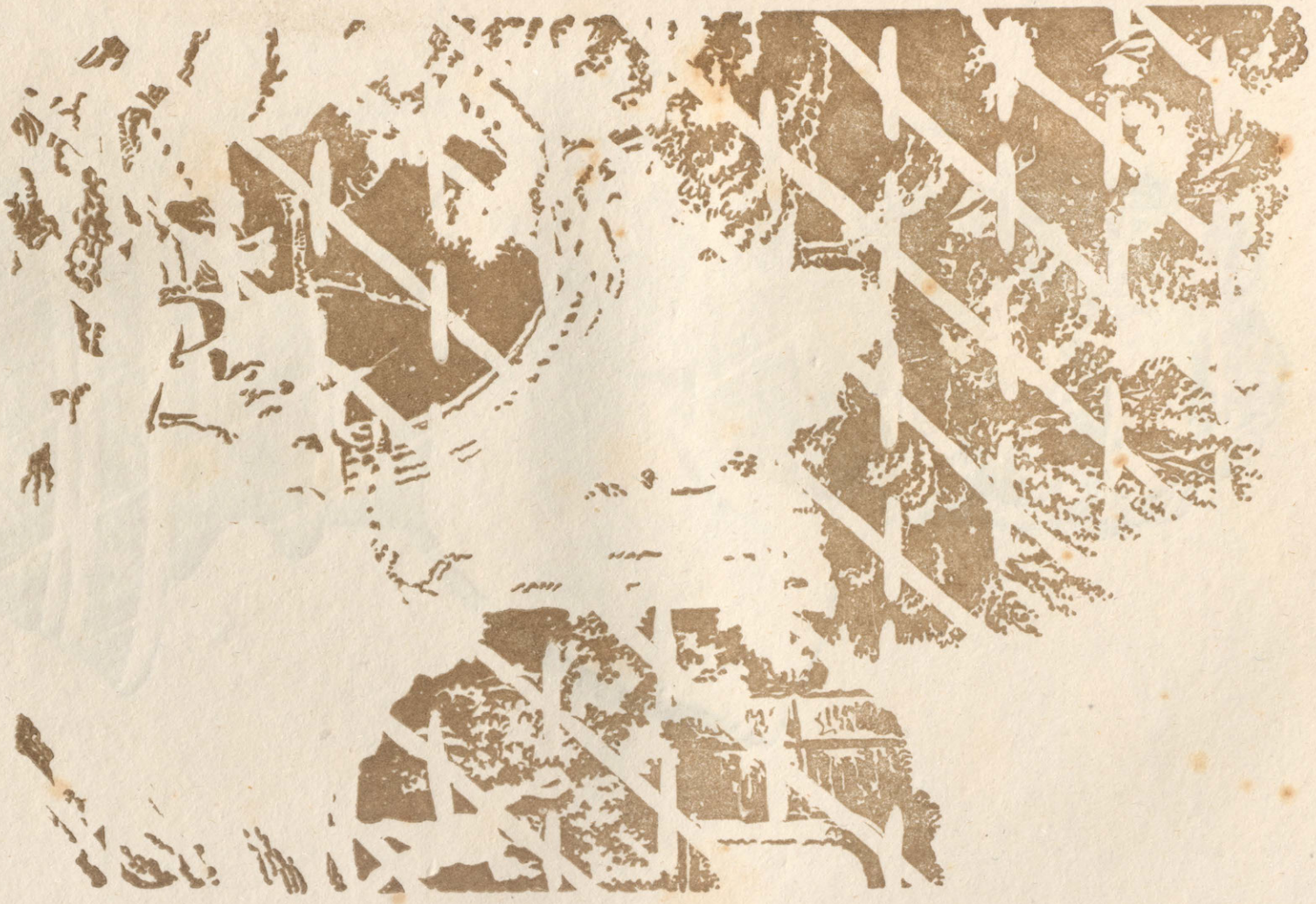
DRAWN BY THE LATE J. THURSTON, ENGRAVED BY R. BRANSTON.

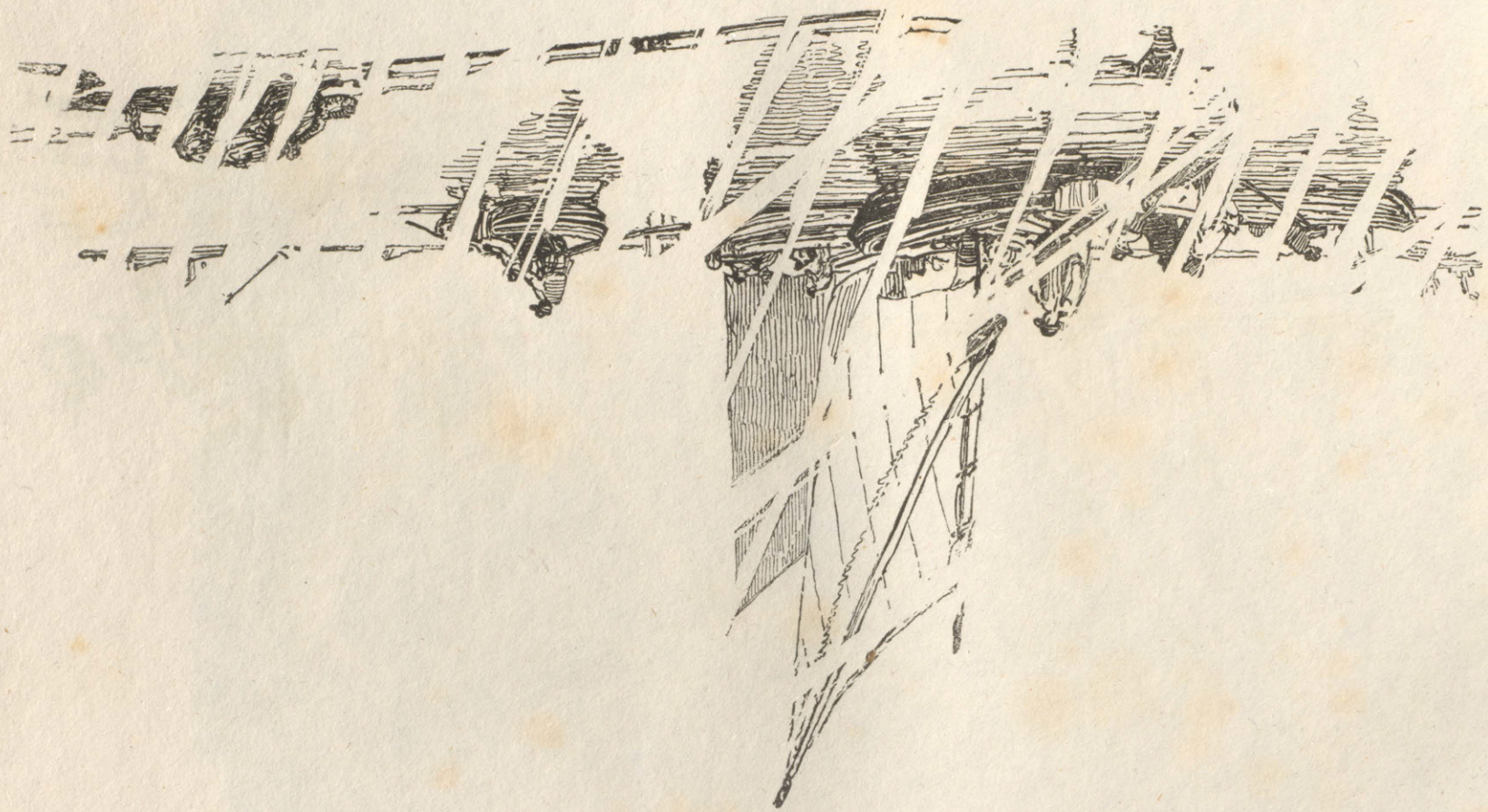
XXXV.

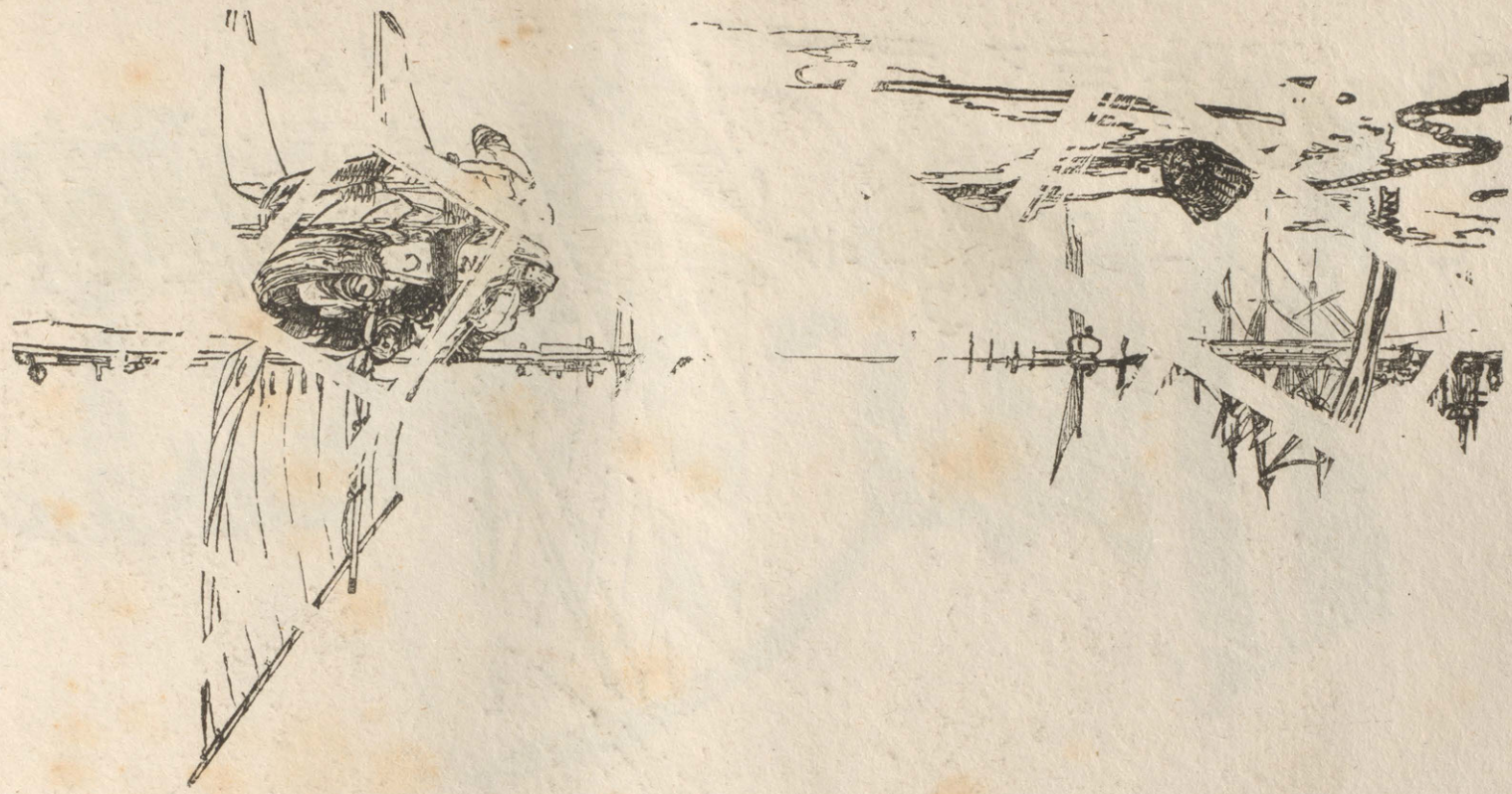
THAT darkesome cave they enter, where they find
That cursed man low sitting on the ground,
Musing full sadly in his sullein mind;
His griesie lockes, long growen and unbound,
Disordred hong about his shoulders round,
And hid his face; through which his hollow eyne
Lookt deadly dull, and stared as astound;
His raw-bone cheekes, through penurie and pine,
Were shronke into his iawes, as he did never dine.

XXXVI.

His garment, nought but many ragged clouts,
With thornes together pind and patched was,
The which his naked sides he wrapt abouts:
And him beside there lay upon the gras
A dreary corse, whose life away did pas,
All wallowd in his own yet luke-warme blood,
That from his wound yet welled fresh, alas!
In which a rusty knife fast fixed stood,
And made an open passage for the gushing flood.







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INDEX.

Practical Hints on Decorative Printing. By Wm. Savage. 4to. June, 1823.

L. s. d.
2d part, price 2-12-6

This long-promised work at length makes its appearance and if it were possible to conceive that such a book could have been published in the earlier annals of the press, we doubt not that its ingenious author, would have been taken up, hanged, & burnt alive for a conjurer & magician. Happily for Mr. Savage, and not unhappily for the public, a different reward will await the appearance of this volume, and instead of a rope of hemp, we should almost anticipate a chain of gold, as the result of the publication.

The work is purely practical, and exhibits such a display of 'colors of all hue;' that one wonders how, by means of a press devoted to the ordinary purposes of printing, such effects could have been produced. The author conceals nothing of the modes of proceeding. It is all clear daylight information, and not only 'he who runs may read,' but he who reads may purchase; and if he be a printer, may reap the substantial fruits of his purchase. If, on the other hand, he be an amateur, or virtuoso, or antiquarian collector, here are all sorts of things for his palate; arabesque ornaments, figures, busts, landscapes, vases, and capriccios of every description, wrought in sundry colors. A few of these, we fairly own, we could have dispensed with; but the greater portion of them possess merit and interest of no ordinary degree. The illustration of 'the Ode to Mercy' from Collins, by which it is manifest the author lays great store, is certainly as a piece of mechanism, quite marvellous; but, as a colored drawing, somewhat

repulsive. It staggers belief, that such a thing could be produced ~~could be produced~~ by means of a printing press; but the fact, nevertheless, is so. Mr. Savage tells us, that 'for the number of blocks, the combinations of color and tints, and the difficulty of printing, it surpasses (he believes) every previous attempt by the type-press.'

Two magnificent large wood-cuts follow, both from the drawings of the late Mr. Thurston: one of 'Rinaldo and Armida;' the other of the Cavern of Despair, from Spenser. These are the 'great guns' of the work; but the second is a gun of ~~infidelity~~ infinitely greater calibre and power. It is enchanting. Engraved by Branston. Thurston always made his heads about a third too large and we see it here; in the figure of

That cursed man, low sitting on the ground.

The back ground is the magical part of the picture. The follow nearly 30 subjects of figures, vases, landscapes, &c. to say nothing of tints of various colours, with instruction to produce and work them. In short, the whole book is a pot of captivating piece of mosaic work and, above all, do we recommend to the reader to notice the Beggar-Girl, the Thistles, Ruins of Kirkstall Abbey, Bridge and landscape, Cottage and landscape, Roman Tiles, gold and green capital B. Etruscan Vase (perhaps the chef d'œuvre) and Butterfly. The bust (is it the Nile) and one or two other things might have been spared.

There are two title pages; the first colored, but the second is in better taste. Facing the first title page, are the arms of Lord Spencer (worked in color) to whom the work is, by permission, dedicated. It cuts a splendid appearance on opening the book. The B, from the first printed psalter of 1457, is very happily executed; but it is almost

superfluous here, as it appears in the works of Rackstraw and Mr. Dibdin. The same may be said of the St. Christopher and annunciation, with the addition of the latter being also in the book of Mr. Ottley. Upon the whole this work makes good all expectations which may have been reasonably raised concerning it; and we can readily conceive at what cost and trouble it has been produced. The copies on Large Paper exhibit all the luxury of which such a work is susceptible; but the small paper is among the best printed books of the day — (The Museum.)

See also a Review of Savage's Work in the Literary Gazette, No. 337, — July 5, 1823.