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DRAWING AND ENGRAVING

AMPHORA FROM CAMIRUS, RHODES.

(THETIS AND PELEUS.)

PELEUS AND THETIS

Lithograph from the Camirus Vase

The amphora from which this drawing was taken was found in the necropolis of Camirus, in Rhodes, by Salzmann and Biliotti in 1862, and is 1 foot 5¼ inches in height. The subject is the story of the surprise and seizure of Thetis by Peleus.

The original is an admirable example of Greek design, and is fairly represented in this copy.

DRAWING & ENGRAVING

A BRIEF EXPOSITION

OF

TECHNICAL PRINCIPLES & PRACTICE

BY

PHILIP GILBERT HAMERTON

HONORARY FELLOW OF THE ROYAL SOCIETY OF PAINTER-ETCHERS; HONORARY MEMBER
OF THE BURLINGTON FINE ARTS CLUB
AUTHOR OF 'ETCHING AND ETCHERS,' 'THE GRAPHIC ARTS'
ETC. ETC. ETC.

WITH NUMEROUS ILLUSTRATIONS

SELECTED OR COMMISSIONED BY THE AUTHOR

LONDON AND EDINBURGH
ADAM AND CHARLES BLACK
1892

TO

SIR GEORGE REID, LL.D.,

PRESIDENT OF THE ROYAL SCOTTISH ACADEMY,
ETC. ETC. ETC.

DEAR SIR GEORGE,

An old correspondent of yours wishes to inscribe this little book to you, as a tribute of respect to rare accomplishments and sincerity in various arts, but particularly (having reference to the subject of the little book) in that of drawing. And he remains, sincerely yours,

THE AUTHOR.

PREFACE

THE publishers of the *Encyclopædia Britannica* having thought that the articles in the ninth edition on Drawing and Engraving might be acceptable in a separate volume, I have revised them and made certain additions, whilst preserving the style and treatment originally adopted.

There was very little choice about the method of treatment, as the subjects were vast and the space rigorously limited. I could only say what was most important and say even that laconically. The style of the papers had to be simply didactic. As a rule, I am unwilling to assume an authoritative tone, but may have as much right to it as anybody else, after giving the best part of forty years to the study of these or cognate subjects.

The first knowledge that ought to be acquired

about drawing and engraving whether by artists, or critics, or simple lovers of art, concerns technical conditions and necessities. Some critics profess a contempt for this practical knowledge, as if it were unworthy of a cultivated man's attention, and although artists cannot do without it they too often limit their technical curiosity to their own speciality in art. Yet it is easy to demonstrate that technical conditions govern even genius itself. The whole nature and inspiration of Rembrandt's production on copper would have been changed if some authority had compelled him to employ the slow and severe burin instead of the free and rapid etching-needle. If the criticism of Dürer's day had been learned enough to impose upon him a demand for truth of tone, that simple exigency would have forbidden the existence of his art; he would have had to learn an entirely different kind of engraving which would have required another condition of mind. If Marcantonio had been forced to imitate texture and translate local colour into black and white he could never have occupied the position of a great classical master, the mere addition of these inferior truths would have sacrificed the dignity and nobility of his

style. The genius of Turner, whose originality lay in the expression of mystery and infinity, could never have found utterance in the compulsory clearness and simplicity of fresco, nor could he have engraved his own ideas with a burin as he did in etching and mezzotint.

My own belief in the closeness of the connection between technic and mind in the fine arts is so absolute that I do not see how it is possible to separate them if an artist is to express his ideas completely. He may express a part of himself in an art suitable as far as it goes (Millet did so when he drew with the pen) or he may assume a character that does not properly belong to him and express what other people ask for in an art foreign to his nature, like a schoolboy writing compulsory Latin, but if he has any strength of artistic idiosyncrasy it must find its own technical conditions.

There is another matter that I desire to insist upon, in a few words, as of extreme importance in all fine art whatever. That is the necessity for respecting individual liberty in the technical use of materials. Every master must be permitted to work in his own way. I have a dread of fashions

in execution imposed by clever experts and of their evil retro-active effect on the modern criticism of masters who were not clever, but only thoughtful, serious, and great. Another deplorable effect of the modern display of cleverness is its power over the younger contemporary artists. In quieter times, art was an expression of individual sentiment, it has now become a struggle in which manual dexterity wins. The dexterity, too, is of one kind, so that if all attained it there would be a tiresome absence of variety. The effects of modern cleverness (not in itself an evidence of much knowledge, still less of any depth of feeling) would be to exclude some of the greatest masters if they could reappear amongst us. Marcantonio would starve as an engraver because he had neither texture, nor tone, nor local colour, and Titian as a pen-draftsman would fail for similar reasons, and also for the lack of sparkle in his way of drawing. The last great painter who was habitually a pen-draftsman and occasionally an etcher was Millet. Happily for the dignity and sincerity of his art, he worked a few years before modern dexterity became predominant.

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received a letter from a drawing-master in an important college who complained that the educational value of drawing was so little appreciated, and he asked me if I could not write some plain statement of the reasons why drawing is desirable as a part of general education. The present opportunity seems a good one, as prefaces are often read when the text of books is passed over hastily, especially if there are illustrations. Drawing is known to be valuable as a training for the eye, nobody disputes that, the doubt concerns its value to the mind.

Mental education consists chiefly in exercising the faculties of memory and observation, in learning to be accurate, and in acquiring the power of co-ordination. Drawing, if rightly pursued, is a constant training in all these. It teaches us to observe, to be accurate, to remember, to analyse by dividing complex material into its component parts, and to co-ordinate by putting material together so that it shall form a consistent whole. Besides this it opens the mind to ideas of relation by compelling us to take account of the laws of harmony and contrast which are more conspicuously visible in the graphic arts than they are in literature and in life, though they

concern, in reality, everything that is human. The habit of looking upon drawing as a small accomplishment may be explained in some measure by the idle way in which it is often followed. The graphic arts only become valuable as a part of education when they are pursued seriously as a discipline in accuracy of observation. When the object of the drawing-master is to enable pupils to seem "clever" by producing a feeble imitation of art that displays consummate manual skill, his labour and theirs are equally vain and nugatory, he and they are wasting their time together, as it is not in the nature of things that great executive talent can ever be mimicked satisfactorily by those who have not really attained it in their own persons. But drawing as a study (not as a display) is always valuable if well-directed. The analogies between learning to see with the eye, and learning to see with the mind are so close that one cannot fail to help the other.

I should say that the study of drawing, as it may be most wisely followed by those who have no intention of using the art professionally, would cultivate rather the scientific or observant intellect than the artistic or creative. And if it is objected

that the habit of exact drawing leads the mind away from poetical sentiment to a matter-of-fact hardness and precision it may be answered that a training in observation makes even feeling and imagination more intelligible to us. No one can be so well qualified to appreciate the action of the imagination in Turner as a careful draftsman who has made accurate topographical drawings of the localities that he illustrated. No one is better prepared to enjoy poetry than a writer of sound and well-constructed prose. Besides, it is not proposed to give to drawing a first place in general education, it is not proposed to occupy the pupil's time with it to the exclusion of literature, all that we contend for is the utility of drawing as one instrument of education, and we say that it cannot be replaced by anything else. It would be better to learn two languages and drawing than to learn three languages without it, because although drawing may exercise the same faculties of memory, observation, and co-ordination that are exercised in acquiring a language it employs them in a different way, and so gives a certain refreshment to a mind occupied with other studies, besides which it has a value peculiar to

itself in educating the eye to finer perception, and the hand to operations more delicate than the handling of dictionaries or the scribbling of free manuscript.

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PELEUS AND THETIS

Lithograph from the Camirus Vase

The amphora from which this drawing was taken was found in the necropolis of Camirus, in Rhodes, by Salzmann and Biliotti in 1862, and is 1 foot $5\frac{1}{4}$ inches in height. The subject is the story of the surprise and seizure of Thetis by Peleus.

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DRAWING

I

ETYMOLOGY OF THE WORD

ALTHOUGH the verb *to draw* has various meanings, the substantive *drawing* is confined by usage to that of design, and is treated as if it were a synonym of design. The word comes from the Latin *trahere*, or from a kindred Gothic word, so that traction and drawing are nearly related, and preserve still the same meaning when applied to the work of animals or machines, as we say that a traction engine draws so many tons. Another form of the same word is dray, the strong low vehicle used by brewers and carriers. It may be worth while to inquire what is the connection between the idea of a dray horse and that of a drawing-master. Derivation.

The primitive idea, which is the common origin of both senses of the word *to draw*, is that of The primitive idea.

moving something in one's own direction. Thus, a horse draws a plough; but a carpenter does not draw his plane—he pushes it; and we should say that a locomotive drew a train when the locomotive was in front, but not when it was behind. The same idea is preserved in the fine arts. We do not usually say, or think, that a sculptor is drawing when he is using his chisel, although he may be expressing or defining forms, nor that an engraver is drawing when he is pushing the burin with the palm of the hand, although the result may be the rendering of a design. But we do say that an artist is drawing when he uses the lead pencil, and here we have a motion bearing some resemblance to that of the horse or engine. The fingers of the artist draw the pencil point along the paper. The analogy may be clearly seen in certain circumstances. When the North American Indians shift their camps they frequently tie a tent-pole on each side of the horse, like a shaft, leaving the ends to drag along the ground, whilst their baggage is laid on cross pieces. Here we have a very close analogy with artistic drawing. The poles are drawn on the ground as a pencil is on paper, and they leave marks behind them corresponding to the lines of the pencil.

The same analogy may be observed between two of the senses in which the French verb *tirer* is frequently employed. This verb is not derived from *trahere*, but may be ultimately traced, like our own verb *to tear*, to the Ionic δείρω. It was formerly used by good writers in the two senses of our verb *to draw*. Thus Lafontaine says, "Six forts chevaux *tiraient* un coche;" and Caillières wrote, "Il n'y a pas long-temps que je me suis fait *tirer* par Rigaud," meaning that Rigaud had drawn or painted his portrait. At the present day the verb *tirer* has fallen into disuse amongst cultivated Frenchmen with regard to drawing and painting, but it is still universally used for all kinds of design and even for photography by the common people. The cultivated use it still for printing, as, for example, "cette gravure sera tirée à cent exemplaires," but here rather in the sense of pulling than of drawing.

The French verb *tirer*.

A verb much more nearly related to the English verb *to draw* is *traire*, which has *trait* for its past participle. It comes from *trahere*, and is so little altered as to be scarcely even a corruption of the original Latin form. *Traire* is now used exclusively for milking cows and other animals, and the analogy between this and artistic drawing is not obvious at first; nevertheless there is a certain analogy of

The French verb *traire*.

motion, the hand passing down the teat draws the milk downwards. The word *trait* is much more familiar in connection with art as "les traits du visage," the natural markings of the face, and it is very often used in a figurative sense, as we say "traits of character." It is quite familiar in *portrait*, derived from *protrahere*.

Delineation.

The ancient Romans used words which expressed more clearly the conception that drawing was done in line (*delineare*) or in shade (*adumbrare*), though there are reasons for believing that the words were often indiscriminately applied. Although the modern Italians have both *traire* and *trarre*, they use *delineare* still in the sense of artistic drawing, and also *adombrare*.

The Greek γράφειν.

The Greek verb γράφειν is familiar to the English reader in "graphic," and in many compounds, such as photograph, etc. It is worth observing that the Greeks seem to have considered drawing and writing as essentially the same process, since they used the same word for both. This points to the early identity of the two arts when drawing was a kind of writing, and when such writing as men had learned to practise was essentially what we should call drawing, though of a rude and simple kind. "The origin of the hieroglyphics of Egypt," says

Dr. Wilson (*Prehistoric Man*, chap. xviii.), "is clearly traceable to the simplest form of picture-writing, the literal figuring of the objects designed to be expressed. Through a natural series of progressive stages this infantile art developed itself into a phonetic alphabet, the arbitrary symbols of sounds of the human voice." Even in the present day picture-writing is not unfrequently resorted to by travellers as a means of making themselves intelligible. There is also a kind of art which is writing in the modern sense and drawing at the same time, such as the work of the mediæval illuminators in their manuscripts.

Picture-writing.

II

PRIMITIVE DRAWING

THE mental processes by which man has gradually become able to draw, in our modern sense of the word, may be followed, like the development of a chicken in the egg, by examining specimens at various stages of formation. His first efforts are remarkable for their highly abstract character, because the undeveloped intellect has few and simple ideas, and takes what it perceives in nature without being embarrassed by the rest. It seizes upon facts rather than appearances, and the primitive artist is satisfied when the fact has been clearly stated or conveyed by him. The study of appearances, and the effort to render them, come much later; and the complete knowledge of appearances is the sign of a very high state of civilisation, implying most advanced artistic culture both in the artist and in the public to whom he addresses him-

Abstract character of earliest art.

self. The work of the primitive artist is an affirmation of the realities that he knew without mystery or confusion. In all early Egyptian work you see at once what the artist intended to draw, whereas the finest modern drawing is often so mysterious as to be most obscure to those who have not made a special study of the fine arts. The primitive artist knew that his work was really that of a writer, and as the sign-painter of the present day takes care to make his letters plain in order that they may be read, so the early Egyptian draftsman had no thought of any more delicate truth of appearance than that which sufficed to let people clearly understand what his figures and symbols were intended for. There was no conception of what artists call "effect," which enters into the greater part of modern drawing, until a very much later period.

We may mention briefly two survivals of primitive art in our own day, which have for their purpose a high degree of legibility. These are coats-of-arms and trade-marks. Heraldic drawing, when properly done, is executed on primitive principles, and is a survival of the earliest uses of graphic art, being really a kind of writing intended to be recognisable by the illiterate when they saw it on shield or banner. Modern trade-marks, of which

the use has greatly extended of late years, are of the same class, and are often designed with a simplicity of intention like that of remote antiquity.

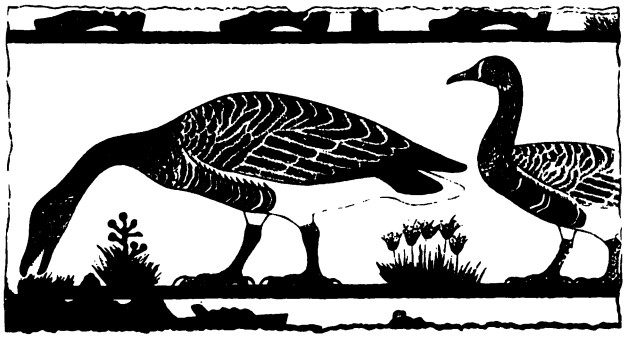
Archaic forms of drawing.

Archaic forms of drawing are thus not all extinct even in our own day, and certain arts are practised among us which compel the modern mind to recover by effort and study something of that simplicity and decision which were instinctive in earlier ages. Bookbinding, illuminating, and designing for pottery are often rightly practised in these days in an archaic spirit. In some of the best modern caricatures there are peculiarities which belong to early symbolic drawing, in which, as Dr. Wilson says, "the figures are for the most part grotesque and monstrous from the very necessity of giving predominance to the special feature in which the symbol is embodied."

Delineation.

The first idea of drawing is always *delineation*, the marking out of the subject by lines, the notion of drawing without lines being of later development. In primitive work the outline is hard and firm, but interior markings are given also. When the outline was complete, the primitive artist would proceed at once in many cases to fill up the space inclosed by it with flat colour, but he did not understand light and shade and gradation. The historical development of drawing may always be seen in the practice

of children when left to draw for their amusement. They begin, as the human race began, with firm outlines, representing men and animals, usually in profile. The next thing they do, if left to their own instincts, is to fill up the spaces so marked out with colours, the brightest they can get. This is genuine primitive art, and it may be carried to a high degree of perfection in its own way without ceasing to be



Geese (Ancient Egyptian).

in complete subordination to the strictest primitive principles. For example, here is a decorative representation of geese from an Egyptian wall-painting of the ancient empire in the Bulak Museum. It is admirably drawn, and seems at first sight very advanced art, but there is no attempt at effect or perspective, and the birds are in profile. The markings of the feathers are beautifully given, but there is no modelling.

By referring in this way to very early art we perceive how drawing may exist without certain elements which in modern times are usually associated with it. We generally conceive of drawing in close association with perspective, and at least with some degree of light and shade, but it may exist independently of both. This may perhaps help us to a definition of drawing. Such a definition would need to be exceedingly comprehensive, or else it would certainly exclude some of the many arts into which drawing more or less visibly enters. A modern critic would be very likely to say that a figure was deficient in drawing if it was deficient in perspective, and yet the two are easily separable, as, for example, in the work of the mechanical draftsman; or drawing may be associated with a kind of perspective which is visually false, as isometric perspective. We might say that drawing was the imitation of form, but a moment's reflection would enable us to perceive that it may create forms without imitating, as it does in many fanciful conceptions of ornamental designers. It might be suggested that drawing was the representation on a flat surface of forms which are not flat, but the most variously curved surfaces, as in vases, are frequently drawn upon, and flat objects are sometimes represented on

Difficulties of a definition.

rounded surfaces. The Greeks were so logical in their use of γράφειν for both drawing and writing that it is not possible to construct a definition comprehensive enough to include all the varieties of drawing without including writing also. If we say that *drawing is a motion which leaves significant marks*, we are as precise as the numerous varieties of the art will permit us to be. Definition.

The first step in the arts of design is a resolute and decided conventionalism. Drawing always begins with line, and there are no lines in nature. The natural world presents itself to the eye as an assemblage of variously-coloured patches or spaces, always full of gradation both in shade and colour, but in all this there is no such thing as a real line. Even the sea-horizon, which is commonly spoken of as a line, is not so in reality: it is only the ending of a coloured space. The conventionalism of the line being once admitted, it may be considered as neither good nor bad in itself, but a simple necessity. Beyond this, however, in the use of the line when it has once been adopted, there may be artistic merit or demerit. Conventionalism.

All primitive line-drawing gives a version of natural truth which is idealised in one way or the other, and it is always conventional not only in

Japanese Drawing (angular).

Japanese Drawing (in gentle curves).

the sense of using conventional means, but also in that of interpreting natural forms with conventional amplifications or omissions. The temper of a primitive civilisation always led its artists to the expression of certain customary ways of seeing things which were transmitted traditionally by art, so that the artists in their turn became the means of imposing the authority of public sentiment upon their successors. The liberty of individual artists, even to draw what may seem such a simple thing as the outline of a human figure, is dependent upon the degree in which the civilisation under which they live is or is not traditional.

To understand the effect of customary ways of seeing things on the use of pure line in drawing, the reader is recommended to study some specimens of early design as it was practised in China, in Japan, in Egypt, in Assyria, and in Greece. It is easy, in these days, to procure photographic reproductions of ancient design for students who do not live near a museum. They will perceive at once in the five countries four entirely different ways of seeing and designing the curvature of lines, although the Chinese and Japanese ways are nearer to each other than they are to the Egyptian or the Greek; whilst on the other hand, different as the two latter may

be, they are nearer to each other than to the art of China or Japan.

Chinese and Japanese design.

A certain kind of curvature is dominant in Chinese art, along with the preference for certain easily recognisable forms. In Japanese drawings the curves are wilder, bolder, more unexpected, more audacious; and when the Japanese designer chose to make use of angles he was, from the same tendency to vivacity and exaggeration, disposed to prefer acute angles. In both Chinese and Japanese work, when at its best, there is often the most exquisite beauty and delicacy of line, especially in the contours of female faces; and there is frequently a masterly power in the interpretation of natural truth, or certain portions of natural truth, by means of the utmost simplicity.

Egyptian design.

In ancient Egypt the line was quieter and less "tormented" than in China or Japan, the curvature more restrained, and the artistic expression generally rather that of calm dignity than of vigorous action. Egyptian art was kept within the strictest limits by the most powerful conventionalism that ever existed, but the student of drawing will find much in it that is well worth his attention. The Egyptian draftsmen attained to a most noble use of line, combining a serious and disciplined reserve with much delicacy

of modulation. The true grandeur of Egyptian work has only been apprehended of late years, because it was formerly supposed that its conventionalism was due to simple ignorance of nature and want of skill in art. It is of various degrees of excellence, and there were inferior artists in the early Egyptian schools, as in others; but we are often startled by magnificent power in conventionalising natural material, and by a peculiar sense of beauty. There is in Egyptian design a singular combination of tranquil strength with refinement. The example given herewith, an Egyptian Queen, is not without decorative elegance, but at the same time it betrays the difficulty felt by the early artist in giving a front view of the person. He had evidently wished to do this, as we see by the shoulders and cape, but when he came to the face and legs and feet he fell back into the old habit of profile. The girdle is fastened in front according to the breast and sideways according to the

An Egyptian Queen.

thigh. The thumb of the left hand is on the wrong side.

Assyrian design is very familiar to us through the ancient wall-sculptures, where the line is often rather engraved than carved, so that we can see quite plainly what were the qualities of drawing which the Assyrian artists valued. They, too, conventionalised nature, but sought for those curves and accents of line which express manly beauty rather than feminine. They drew, in their own way, admirably well, with great firmness and self-command, knowing always exactly what equivalents or representatives to give for the lines and markings of nature, in accordance with the spirit of their artistic system. Their art is much more strongly accentuated than the Egyptian, and we might even say that it is more picturesque while it is less tranquil. Assyrian design has more of the spirit of painting in it than

Assyrian design.

An Assyrian King.

Egyptian, and less of the spirit of sculpture. The Assyrian line tends to the expression of energy in action, the Egyptian to strength and beauty in repose.

III

LINEAR DRAWING IN ANCIENT GREECE

NOTWITHSTANDING the high degree of power and skill attained in linear design by nations which existed before the artistic development of Greece, Greece. it must ever remain an inexplicable marvel that the Greek designers should have attained, apparently without effort and simply by the gift of nature, to a degree of perfection in the use of line which had never been approached before and has never been equalled since. The manly beauty of an Assyrian king at a lion hunt, with his curly beard and his muscular legs, and his arm mighty to bend the bow, is grand indeed, but with a purely barbaric grandeur; the half-feminine beauty of an Egyptian deity lives chiefly in the serene face—the body is often frankly architectural, and has always rather the qualities of a column than those of the living flesh. But in Greece the curves of the line were for the

with the knowledge and taste of men who lived in the early youth of the human race and were not disturbed and distracted by the discoveries and experiments of modern Europeans. Amongst its other peculiarities may be mentioned its beautiful independence of anatomy. No anatomical markings are ever given simply as such. The figures are living men and women with their skins on, not *écorchés* in a dissecting-room. There is less of the anatomical tendency in Greek art than in Assyrian. When the Assyrian artist wishes to make you feel that a man's leg is very strong he maps out every muscle and tendon as far as his knowledge will allow, but the Greek contents himself with showing the vigour and ease of the strong man's action. It is, however, in the representation of the female form that the grace of the Greek line drawing is most conspicuous and most unprecedented. There had been before some lithe feminine grace of motion even in Egyptian art, but it is stiffness and awkwardness themselves in comparison with the Greek.

Natural course of art education.

The right progress of art education in modern times could not be better assured than by following in the case of each individual student that course of development which humanity itself has followed.

Greek design the proportions of the body are not yet well discerned; the arms are usually too thin, the thighs too thick relatively to the waists and the lower part of the legs, the noses sharply pointed and inelegant, as if with an intention of caricature.

Peleus leading Thetis home.

These characteristics will be observed in the Runners, and also in the profiles of Athena and Poseidon, from Panathenaic amphoræ produced in the pottery works of Exekias about the end of the sixth century or the beginning of the fifth century B.C. An archaic tradition remained in Greek vase

Athena and Poseidon (from an amphora by Exekias).

painting even in the best time of art, when great painters were drawing as beautifully as the contemporary sculptors carved. For example, this beautiful design of Peleus leading Thetis home belongs to the best period of Greek design (about the middle of the fifth century B.C.), and still it bears traces of archaic imperfection, as in the lower part of the leg and the foot of Peleus. In the vase of Camirus, on the contrary, we have Greek design in a condition of complete development, entirely delivered from archaic tradition and influences except so far as the early stages of Greek art may have been a necessary preparation for the later.

The following example from a vase of the fifth century B.C. is also a good illustration of the progress in Greek art which delivered it from archaism. Let the reader compare especially the feet of Thetis and Peleus with those of Telemachus and Penelope. In the Peleus vase the feet are strictly in profile, in the Penelope the artist has been indifferent whether they were in profile or not. So with the heads. The attitudes are beautiful in both, but the condition of graphic art is much more advanced in the Penelope.

Greek drawing on vases.

The leading principle of Greek design on vases was the expression of form by pure, firm, and

accurate line. Spaces were distinguished by flat tints of red, black, and white, but there was no shading to indicate modelling. When local colour could be easily hinted at by markings of black thicker than a simple outline, it was frequently done, as it was continually in Japanese art, but care

Penelope's Loom (from a Greek vase of the fifth century B.C.)

was taken that these broader black markings should never be important enough to alter the true character of the design, as essentially a work in simple line. Thus, a woman's hair might be drawn with broad touches to make us see that it was darker than her flesh, and the dark band round the

edges of her dress would be given in pure black of its own width. Nor was this the only device by which a certain degree of local colour was suggested to the eye, though it was not really imitated. The red did for ordinary flesh colour, and white for flesh colour intended to be of more than ordinary fairness. Great spaces of black were reserved for the background, by which a striking relief was given to the figures. This is the regular principle of Greek vase decoration, though the artists did not strictly confine themselves to it, but would also work in simple black and white, as in the Portland vase, or introduce brighter colour sparingly, like the turquoise of the mantle of Thetis and in the wings of Eros in the vase of Camirus. This use of colour, however, did not in the least interfere with the unflinching system of Greek drawing, which was, in the strictest sense of the word, *delineation*. In this it differs absolutely from many modern kinds of drawing, which avoid the line as much as the Greeks delighted in it. This is not intended as an expression either of praise or blame; it is simply a statement of fact.

Character of Greek delineation.

The truth is that Greek line-drawing is simply the most perfect condition of a very early form of art. It is the child's idea of drawing, carried out

with the knowledge and taste of men who lived in the early youth of the human race and were not disturbed and distracted by the discoveries and experiments of modern Europeans. Amongst its other peculiarities may be mentioned its beautiful independence of anatomy. No anatomical markings are ever given simply as such. The figures are living men and women with their skins on, not *écorchés* in a dissecting-room. There is less of the anatomical tendency in Greek art than in Assyrian. When the Assyrian artist wishes to make you feel that a man's leg is very strong he maps out every muscle and tendon as far as his knowledge will allow, but the Greek contents himself with showing the vigour and ease of the strong man's action. It is, however, in the representation of the female form that the grace of the Greek line drawing is most conspicuous and most unprecedented. There had been before some lithe feminine grace of motion even in Egyptian art, but it is stiffness and awkwardness themselves in comparison with the Greek.

Natural course of art education.

The right progress of art education in modern times could not be better assured than by following in the case of each individual student that course of development which humanity itself has followed.

True and careful lines, in combination with the colouring of spaces in a few flat tints, are the natural beginning. What a child does with infantile unsuccess for its amusement the beginner in serious art should be taught to do carefully and well for his instruction. The accurate use of line is the first thing to be learned with the pencil point, and the equal laying of a flat tint is the first thing to be learned with the brush.

Even at so early a stage in art as the use of the simple line, we find ourselves face to face with one of the most remarkable peculiarities of the fine as distinguished from the mechanical arts. It does not require much critical acumen to discover that accuracy is one thing in a line and beauty another. The student ought to work at first for accuracy, but from beautiful works of art which are not in themselves accurate copies of nature, but copies idealised at least in some degree by the taste and feeling of the artist. All works of art that are worth studying are ideal in one way or another. We have spoken of the Greek line, which is one of the most highly idealised of all artistic expressions. The Greek artists when they outlined an object always greatly simplified the outline by omitting many minor accidents of angle and curvature which

a modern picturesque artist would seek for because of their variety. But simplification does not explain all that the Greek mind did to alter nature in design. Its sense of beauty and elegance was so exquisite that it continually amplified what was meagre in the model, reduced what was superabundant, and corrected what was awkward. All this could be done, and was done, with the simple line alone without any help from chiaroscuro, and it is one of the most remarkable proofs of the expressional power of the line that it even suggests modelling in the blank spaces which are inclosed by it.

Notwithstanding the excellence of Greek linear design, it would be well that the student's attention should not be confined to it too exclusively. For, in the first place, we may remember that the vase-paintings which remain to us were not executed by the most eminent painters living at that time, but were only done by clever workmen in the artistic spirit which the eminent painters had rendered prevalent and fashionable; whereas in modern art we can study the *ipsissimæ lineæ* of truly great men, both in their drawings and in many cases more accessibly still in their etchings. Again, the Greek designers had certain excellencies, but not

Advantages of studying modern design.

all excellencies, the remarkably harmonious character of their work being, in fact, quite as much due to its absolute neglect of certain qualities of line as to its possession of other qualities. It is a narrow and limited kind of art, the singular perfection of it having been made possible by that narrowness. Modern art, on the contrary, is infinitely vast and varied, full of imperfection, abounding in all conceivable kinds of error and failure, but also rich beyond all that a Greek could possibly have imagined in knowledge and sentiment of many kinds.

The Greek spirit passed through its first decadence in Roman art, and was at last degraded past recognition at Byzantium.

IV

DRAWING IN THE MIDDLE AGES

THE Middle Ages may be said to include a space of about 750 years, from A.D. 700 to A.D. 1450. This estimate is, of course, only an approximation, as it is impossible to fix a precise date either for the beginning or the end of a state of artistic cultivation. In the graphic arts mediæval influence continued through the fifteenth century.

Extinction of classical design.

The art of drawing had preserved the ancient classical spirit for some centuries after the Christian era. Finally, classical design spent itself in a decaying tradition and became extinct. Drawing was then learned over again, starting on the most primitive principles. The distinction between classic and mediæval art is that the first was founded on the study of the naked figure, whilst the second developed itself from ornament. Even in the latest decline of classic art, so long as traditions of an-

Drawing developed anew from ornament.

tiquity lingered, some knowledge of the naked figure still survived, whilst mediæval art began with ornamental dress and only just so much of figure design as was necessary to convey the idea of a human being within the dress.[1] The reader will have a clear conception of mediæval principles in drawing if he associates them with ornament in architecture, furniture, patterns of all kinds, and decorative writing in precious manuscripts. In ancient Irish manuscripts (seventh, eighth, and ninth centuries) the figures themselves are conceived as parts of an ornamental pattern, as even in our own day writing-masters sometimes include a sort of rude figure-drawing amongst their involved flourishes with the pen, displaying, like their mediæval predecessors, great manual dexterity with little knowledge. Although the mediæval artists were ignorant of the figure, they had that instinctive appreciation of the true nature of ornament which belongs to simple and early stages of civilisation. They drew the figure as ornamentists whose knowledge came only from practice in ornament might be expected to draw it.

Mediæval principles in drawing.

Mediæval appreciation of ornament.

In the Bayeux tapestry William of Normandy

[1] Sometimes not even so much as that. In Byzantine drawing the costume is represented as if standing by its own stiffness, with a human head and hands somehow fastened to it.

and his knights are represented with much attention to their chain armour, every ring of which is drawn as if it were a circular pane in a glass window, without reference to the shape of the body except as an

William the Conqueror and his Knights (from the Bayeux tapestry).

outline enclosing the rings, which are drawn purely on the principles of ornament.

In the long centuries of mediæval design there was great improvement in grace and elegance of line (compare good designs of the thirteenth century with those of the ninth or tenth), but never any

figure-science worth comparing with that of the Renaissance; in fact, such knowledge was not attainable by mediæval methods. Progress in mediæval drawing.

Landscape backgrounds occur frequently in mediæval manuscripts, and prove that the artists were by no means indifferent to *material* landscape; that is to say, that they noticed the existence of hills, trees, and rivers, whilst they seem to have taken great pleasure in human work as affecting natural landscape by converting its open spaces into fields, parks, and gardens. Mediæval artists, however, were not good landscape draftsmen in the modern sense, because they only drew material objects, and took little or no account of effects. All the component parts of a mediæval landscape can be counted; there may be a hundred trees, but never a forest; there may be twenty houses and five towers, but never a city. Landscape.

Although the artists of the Middle Ages were ignorant of two most important qualities, namely, the form of the naked figure and the effects that lend significance and unity to landscape, they gave new openings to the art of drawing, by which it continues to profit even in the present day. Notwithstanding the rudeness and ignorance of mediæval art, it excelled classical art in expression, in Superiorities of mediæval art.

The Arming of a Knight (from a manuscript in the British Museum, thirteenth century).

Messenger bringing a Letter to the Royal Army (from a manuscript in the National Library, Paris, thirteenth century).

pathos, in variety of action, and in the significance of groups. Its childishness was that of a very observant child with its eyes well open to all that was going on around it, and with a lively interest in religious and secular legend. If the mediæval draftsman knew little or nothing of the naked figure, he took a great interest in dress, and our modern

Mowers (from a manuscript in the National Library, Paris, twelfth century).

costume-painters are his descendants. It would be a great mistake to suppose that the ignorance of the mediæval draftsmen deprived them of lasting influence. German design and engraving of the sixteenth century is perfectly mediæval in principle, only with added knowledge, and its influence has been wide and enduring. Much modern drawing

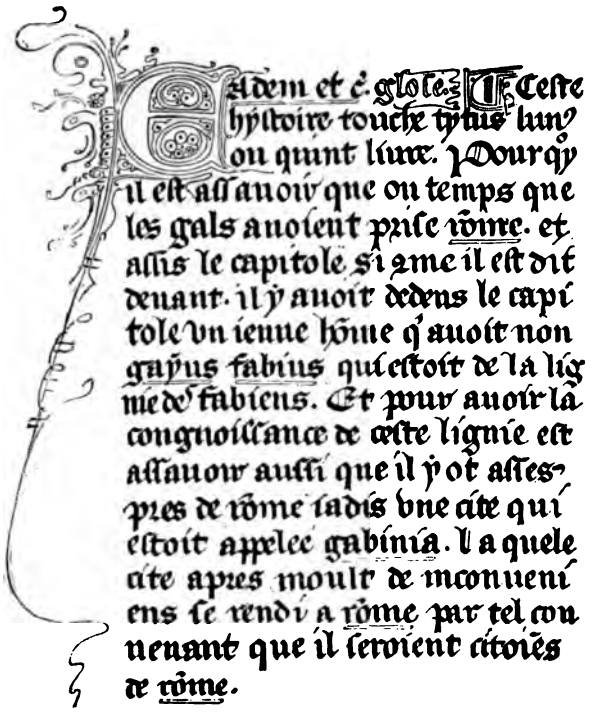
Persistent influence of mediæval principles.

(*e.g.* that of D. G. Rossetti and Mr. Burne Jones) looks back directly to the Middle Ages. The modern revival of Gothic architecture for ecclesiastical purposes has formed modern schools of ornamental design on mediæval principles. When the architecture of a new church is Gothic, its stained glass, its mural decoration, and all its furniture have to be Gothic also.

The art of illuminating manuscripts, which has been revived in the nineteenth century, and is now in constant requisition for addresses and other commemorative documents, is chiefly practised in imitation of the ornamental writing of the Middle Ages. The following specimen is from a manuscript of the fourteenth century (a Roman History paraphrased from Valerius Maximus). The capital letter is an example of elegance and good taste in the invention of linear curvature for its own sake as pure ornament without reference to any natural object. It shows great manual dexterity and a very delicate sense of proportion. Its qualities of line and curve are much the same as those of the best mediæval iron-work.

The principles of mediæval mural design do not call for much separate comment, as they are the same old principles which prevailed in Egypt and Greece. Outlines are clear and decided, and orna-

ment is willingly introduced in dresses and backgrounds in order that the wall itself may be ornamented. In the accompanying illustration, a mural painting of St. John the Evangelist, the designs



of the dress, the pavement, and the background are made to serve as decorations for the wall on which the subject is painted. The most judicious mural design is therefore a continuation or survival of the early mediæval preference for hard outlines

St. John the Evangelist (from an English mural painting of the fifteenth century).

and ornament. When mural design attempts the modern pictorial qualities of mystery and effect it becomes unsuitable and out of place.

It may be added that almost all modern grotesque illustration, such as that of Doré, is a continuation of the grotesque invention in mediæval sculpture and design. Of late years much of the best French caricature, that of Caran d'Ache and Guillaume, for example, is more classical in sentiment and technical qualities; it comes from Greek design with a strong additional influence from Japan.

V

THE RENAISSANCE

If the student wishes to learn the figure, and has not to concern himself with ecclesiastical architecture or decoration, he may pass at once from the period of decline in Greek art to the Renaissance without pausing to investigate the more or less successful attempts of the intervening ages, in which, indeed, may be found examples of quaintly rendered human character, but hardly any of well-studied human form. The best way is to go from antiquity

Holbein. to Hans Holbein the younger at once. He had remarkable power and skill in the use of line, many of his best portraits being hardly anything more than a delicately true outline, with just enough shading to make us understand the modelling, but nothing of what is commonly understood by chiaroscuro. As Holbein was much more of a realist than the Greeks were, his lines have more variety

of curvature than theirs, and the forms inclosed by them are more individual. All that is best in the peculiar spirit of northern drawing at that time is to be found in Holbein's art, which is full of close observation, of calm sobriety, and unflinching truthfulness. In the south of Europe the Renaissance led to that artistic development of which the modern schools of figure design have inherited the ideas and principles. A certain period in the life of Raphael marks the transition from the old spirit to the new, and his great success in the application of the new principles led to their authoritative establishment in the schools of Europe. The Renaissance made drawing at the same time more scientific and more ideal. The artists studied anatomy more than it had ever been studied before, and they gave a degree of attention to the whole of the human body which a mediæval draftsman would have concentrated almost exclusively on the face. But they did not rest satisfied with copying the facts of nature and investigating the laws of construction and of action,— they took that farther step which the Greeks had taken before them, and drew the figure not merely as it appeared to their bodily eyes, but with that more perfect beauty which was suggested to the eye in the artist's mind. Raphael openly affirmed this

The Renaissance.

principle by declaring that he drew men and women, not as they were, but as they ought to be, and the process of idealisation may be actually seen in what he did by comparing his studies with his completed works.

We have hitherto spoken simply of the use of line, that being essentially drawing in the strict sense of delineation; but when the European mind had reached the period of the Renaissance a new study took its rise—chiaroscuro—which became so inextricably mingled with that of drawing that it is impossible to speak adequately of the one without giving some account of the other. The increased knowledge of the muscular structure of the body led the artists to pay more attention to modelling than had ever been paid to it before, so that good modelling got to be considered an essential part of drawing. It may be necessary for the uninstructed in artistic matters to explain in this place that modelling in design is the art of shading in such a manner as to give everything its due degree of projection or relief, and the practical difficulty of it lies in the necessity for making the degree of projection in any object or part of an object not what it is in nature, taken by itself, but what it ought to be relatively to other projecting masses

Chiar-oscuro.

Modelling.

or details in the same drawing, so as to be important only in the right degree, or subordinate, and always to form part of a consistent whole. The simple line-work of the early stages of art was therefore abandoned by the greatest artists of the Renaissance as a general means of study. Even when using the most rapid means of expression for themselves alone, they were accustomed to treat the outline with little respect, and always to indicate shading in some way, often by the very rudest means, as, for example, by a few hasty diagonal strokes of the pen. Leonardo da Vinci retained to the last a good deal of that care about the outline which characterises the earlier stage of art, but even in his case it was accompanied by an equal degree of care in modelling. In the sketches and studies of Michelangelo the care and time given to the outline are always in exact proportion to the pains taken with the modelling, and this employment of the time at the artist's disposal is a clear proof that he considered modelling as much a part of drawing as the outline itself. When he had time to do the modelling thoroughly, as in his finished studies, he made the outlines very carefully also; but when the time at his disposal was limited he did not economise it by making, as an earlier artist would

L. da Vinci.

probably have done, a careful outline without modelling,—he still gave both together, but in a rougher and readier way. The student can find no better examples of this treatment than any three sketches and studies of Michelangelo which may have cost him respectively five minutes, half an hour, and three or four hours of labour. The work in each instance is economised, not by rejection of one portion of his art, but by summarising the whole, more or less, with the strictest reference to the time at his disposal. The studies of Raphael are done on the same principle.

Michel-angelo.

The spirit of the Renaissance was caught from the study of antiquity, but it gave more latitude to original genius by allowing a freer play to personal qualities in art. This led to bold exaggerations, which became a part of artistic expression, and were to it what emphasis is to the orator. Michelangelo himself set the example of this, and it may be observed that, whereas when the works of the ancients seem to lose their spirit on reduction to a smaller scale, and require to be accentuated by the copyist who reduces them, those of Michelangelo bear reduction easily by reason of their own strong accents and exaggerations. Leonardo da Vinci, being of a calmer temper, put little exaggeration into his

Exaggeration.

finished works, which are distinguished by great suavity and sobriety of manner; but he gave it free play in his caricatures, which served as an outlet for the more violent side of his genius.

A kind of exaggeration almost universal during and since the Renaissance has been a more than natural marking of the muscles, which is opposed to the spirit of the best Greek design, and was directly due to anatomical studies, especially to the habit of dissection. This has continued down to our own day in all the learned schools of Europe. For example, in the St. Symphorien of Ingres the figures of the Roman lictors are drawn as if they were without skins, and every muscle is enormously exaggerated.

A better result of the scientific spirit of the Renaissance was the degree of care and attention which artists began to pay to the measurement of the human body, so as to determine its true proportions. Albert Dürer made and recorded very numerous and careful measurements both of man and the horse, declaring that "no one could be a good workman without measuring," and that "it was the true foundation of all painting." Leonardo affirmed in words of equal plainness that "a young man ought to begin to learn perspective by measur-

Measurement.

ing everything." This habit of measurement has been continued down to our own day by the more careful artists. Whenever an animal died in the Jardin des Plantes, at Paris, Barye the sculptor went at once to take all its measurements, and drew or modelled it besides; but he measured animals all his life, notwithstanding his great skill in drawing by the eye.

VI

THE PICTURESQUE

IT is necessary to say a few words in this place about the rise of what we now call "picturesque" drawing, which in the present century has been more prevalent than any other throughout Europe. Although the true nature of the picturesque is not generally understood, all know what they mean by it when they apply the word to real objects; for example, we all consider that a feudal castle or abbey, when it has become an ivied ruin, is a picturesque object, but that a Greek temple in perfect repair is not. Even amongst things in equally good repair the distinction is recognised; thus we say that the costume worn by Charles II. was more picturesque than that worn by William Pitt. The nature of the quality may be most conveniently studied in drawings, and the technical analysis of all drawings reputed to be picturesque shows that

Picturesque drawing.

The quality called "picturesque."

the quality is inseparable from irregularity whether of line or shade. The regular outline of a Greek column is not picturesque; the irregular outline of a gnarled oak branch is so in a high degree. The regular gradation of the open sky is not picturesque, but the varied and uncertain shades of broken storm-clouds are picturesque material, especially available for water-colour. We find, too, on analysing all works reputed to be picturesque, whether executed with the pen, the etching-needle, or the brush, that the quality is closely connected with the elaboration, or at least the suggestion, of detail, and that simplification kills it. The rugged outline of a Cumberland hill is picturesque, but not a smooth dome of snow, like the summit of Mont Blanc without the neighbouring *aiguilles*. There is consequently in all picturesque drawing a tendency

The picturesque in detail.

rather to accentuate detail than to overlook it, just as the picturesque writing of the English newspaper reporter contains a multitude of details that are scarcely worth telegraphing or printing. This holds good for architecture and costume. The age of Elizabeth was a picturesque age, and there was much elaboration of detail in architecture, furniture, and dress; the age of Napoleon I. was eminently unpictur-

esque, and it was an age of severity and simplification.

Veracity and the picturesque.

As to veracity in art, a dispassionate investigation of the subject soon brings positive proof that the picturesque way of dealing with nature is sometimes favourable to veracity of representation and sometimes much the reverse. An artist with a strong sense of the picturesque is sure to notice a great quantity and variety of truths that would escape the attention of a severer student of form, or that would appear trifling to him and unworthy of record.

Classical contempt for the picturesque.

Artists who have the classical spirit, and have gone through a classical training, often look upon the picturesque in nature with aversion, and even contempt, and purposely avoid it in their art, simplifying what they see before them so as to get lines without interruption in a pure kind of straightness or a continuous sweep of curve. In shading, the artist, hostile to the picturesque, is careful to have broad spaces of quiet tone, flat or with gradation, but always without too great variety or intricacy of colour. To obtain this quiet simplicity the classic artist has to discard much that is visible in nature; but it is a mistake to suppose that the modern picturesque draftsman is, on the whole, more truthful. He turns severe forms into picturesque ones

all; but when a landscape painter does the same thing, by an effort of imagination, with his mountains, trees, or towers, he unavoidably violates topographic accuracy. The habit of inaccuracy soon forms itself, for this reason, in all landscape draftsmen who compose; and all artists by profession are compelled to compose in order to make their works attractive in appearance and saleable.[1] Simple studies of landscape may, however, be made with perfect accuracy, and are so done occasionally for special purposes. The best examples of such accurate landscape design to which we are able to refer the reader are the engraved studies of Mr. Ruskin. Fine examples of artistic landscape design, in which natural scenery is well interpreted but not literally copied, are infinitely more numerous. The *Liber Veritatis* of Claude, and the *Liber Studiorum* of Turner, abound in fine examples of composed landscape, and a great number of

[1] This was true when the passage was first written, but of late years there has been a tendency amongst the younger French artists to emancipate themselves from composition, which they condemn as too obviously artificial. Still, there is often a less obvious kind of composition in the works of men who affect not to compose, but who, in reality, compose in a manner unlike that of their predecessors. As the desire for composition is almost universal in the human mind, the thing is likely to remain, though the fashions of it may change. Even a rebellion against it acknowledges its power.

illustrated works have been published during the present century, in which the student may find endless instruction.

Landscape design is usually taught to amateurs by drawing masters, because it is thought to be easier than that of the figure; but the choice of landscape for elementary instruction is unfortunate, because a beginner requires simpler and more definite material than is to be found in landscape nature. It is wiser for all beginners in art to study for a long time the most simple and definite objects which can easily be entirely detached from other objects and measured by themselves. This was the true early classic manner of drawing, and the student who follows it in the present day will always be rewarded by an earlier insight into the qualities of form than can be attained by any other method. The truth of this is more fully recognised wherever drawing is taught seriously; but those who teach water-colour to amateurs too often encourage them in a confused way of looking at nature which, at the best, only results in a feeble imitation of fifth-rate water-colour landscapes, in which there is nothing worthy to be called drawing at all, nor any real rendering of form. It is of the utmost importance to amateurs that they should

Courses of study in drawing.

not misapply the little time which they can usually give to practical art, and yet they often do misapply it in many ways. A very common cause of loss of time, in their case, is false finish, and labour thrown away by the employment of methods which take more time than other methods for an inferior result, as, for example, when painful pen hatching is employed for shading where the chalk and stump, or charcoal, or the brush, would give a shade of far better quality in a twentieth part of the time. All truly great artists, though prodigal of labour when their purposes required it, have economised it whenever the economy was not artistically an evil, and this is often best seen in their sketches, which give rapidity, not by hurrying the hand, but by using the most summary means of expression. This art of summary expression in drawing is of great use to figure painters, but it is still more important in landscape, because the effects of nature pass so rapidly that they do not permit any slow method of interpretation. Many of the fine sketches by great men have been done, without hurry, in a few minutes.

For landscape painters the most favourable instruments of study are those which permit the greatest rapidity. The lead pencil is swift for line

and for light indications of shade, but is not good for complete shading. The pen is rapid for line but not for shade, therefore it may be rejected for study unless the drawing is to be reproduced. Chalk on tinted paper is rapid both for line and shade. Of all processes, charcoal is the most rapid for shading, whilst such lines as are used in it may be applied with the same speed as in chalk. Sepia or Indian ink applied with the water-colour brush may be used quickly when the artist has acquired the necessary dexterity, but they are not so quick as charcoal for two reasons. They require one to pause for drying, and they do not permit instantaneous alterations.

We ought not to forget that a painter draws with the brush whilst painting, even though he may have made no previous outline. A clever painter making a rough sketch in oil from nature that is to take, say, half an hour, may still get his masses right in proportionate size, and therefore put more *drawing* into his work, in the true sense, than a bad but laborious draftsman spending days over a pen-drawing of which the proportions were originally wrong.

VIII

THE LAW OF PROGRESS IN DRAWING

To understand the nature of progress in drawing which invariably follows the same law, we may begin by observing the characteristics of primitive drawing. They are, universally, as follows :—

1. The primitive draftsman is careful of his outline, and not careful to get the areas of his masses in right proportion to each other. He is like a boy land-surveyor who should minutely map out the sinuosities of hedges without paying due attention to the relative areas of fields.

2. The primitive draftsman seeks beauty, not in form, but in ornament. He delights in the laborious copying of jewellery, furniture, and the patterns of rich stuffs.

3. The work of the primitive draftsman is always clear and definite. He never hints at, or suggests

ciples of primitive work, and if they were never interfered with by teachers those principles would re-establish themselves, and we should soon be back again, artistically, in the Middle Ages. In fact, primitive design is never wholly extinct; it is constantly reappearing.

Progress in drawing shows itself by a gradual advance towards the following qualities:—

1. Definition, instead of being universally clear and hard, is used in the most various degrees from the sharp and clear to the entirely vague and undefined. Consequently the hard, persistent outline is abandoned.

2. Masses are seen in their correct proportions, and more attention is paid to the area of the mass than to its boundaries.

3. Modelling is carefully studied, and more time is devoted to it than to linear design.

4. Detail is represented only when it is artistically significant. Ornament is introduced for its poetic interest, and usually in small quantities, not to make the drawing itself decorative.

5. Suggestion is preferred to the hard statement of fact. Hence sketching, for its power of hinting and suggesting much more than what it states explicitly, is not only valued in itself, but carried

into engraving (in the form of etching), into water-colour painting, and even into oil pictures, many of which, in an advanced condition of the fine arts, are sketches on a large scale.

6. Tonic values are carefully studied, especially for landscape, in which they come to be considered of supreme importance. It is especially characteristic of advanced art to observe delicate distinctions between pale tones. Another strong characteristic in very advanced art is that it holds the powers of darkness much in reserve so as not to lose the bass notes too much in black. In a few words, advanced art subdivides the scale between its extreme light and its extreme dark, but this depends on the technical means at its disposal.

IX

DRAWING FOR PHOTOGRAPHIC PROCESSES

THE greater part of professional drawing executed at the present day is done for reproduction either in permanent photographs or in the form of plates engraved in intaglio like etchings, or as blocks to be printed like woodcuts. A few brief notes on the kinds of drawing best adapted to reproduction may be of practical use to some readers.

It is always much more difficult to obtain perfect reproductions of shade drawings (whether the shading is done in charcoal or wash) than of linear drawings.

In reproductions of shade drawings the most common defects are these two :—

1. A confusion of dark tones in mere opacity, whereas, though dark, they ought to be separable from each other and still have light within them.

2. The loss of firmness and of clear distinctions

in pale tones. In good painting these are both delicate and decided at the same time; in photographic reproduction they often seem half washed out when they are not lost altogether.

To give satisfactory results, a drawing ought to be made on purpose for photographing. Oil monochromes should be perfectly dull, as the slightest shine gives false lights, and the brushwork should be scarcely visible, as photography exaggerates all inequalities of surface. It is prudent to avoid too fine distinctions between the dark and darkest tones, and also between the light and the lightest. In a word, in working for process-reproduction it is wise to simplify the scale of shades and divide the interval from white to black, say, into two octaves rather than eight.

Shade-drawings, whether in wash or done by a dry process, are rarely quite satisfactory in reproduction; but an artist who makes careful experiments may ascertain in a short time the capabilities of the existing processes and conform himself to their exigencies. Without such conformity he has a poor chance of success.

Linear drawing for photographic reproduction is far surer and more simple. The artist draws his lines in Indian ink, never diluted, on perfectly white

paper or Bristol board. As all the lines, though not of equal thickness, are equally black, they afford the same facilities for reproduction, which cannot be said of pale and dark washes. The following is an

The Antiquary in his Sanctum (pen-drawing).

analysis of the most effective modern pen-drawing for printing with the text, that is, typographically. It is equally applicable to pen-drawing for intaglio héliogravure (in which the drawing is etched on a copper-plate), except that in shading for intaglio

plished execution they are usually left in the drawing itself.

6. Whenever lines can be made to do duty as darks and for the expression of character or the explanation of structure at the same time, they are employed for both at once to economise labour.

7. The direction of lines used for shading is always made explanatory of surfaces. It is never treated as a matter of indifference. The strength of lines varies with the distance of objects represented.

The accompanying reproduction of a sketch by Vierge, representing the head of a religious procession in Spain, is an example of pen-drawing reinforced in the blacks with a brush charged with undiluted Indian ink and reproduced by Dujardin's *héliogravure*, which is an intaglio process like etching. I mean that the lines are bitten in whilst in the typographic processes, *e.g.* the Antiquary, they are in relief. This drawing was difficult to reproduce, and an attempt by the typographic process was a failure. It was, however, originally intended for that process, as blotted blacks are objectionable in plates.

X

BOOKS ON DRAWING

THE student should thoroughly master and remember Burnet's *Essay on the Education of the Eye*, which is most concise and contains nothing doubtful or disputable. During the second quarter of the nineteenth century the most popular works on drawing were those of Mr. J. D. Harding who exercised an immense influence over English amateurship. Two of his works, *Elementary Art* and *The Principles and Practice of Art*, are still much consulted, both by amateurs and professional landscape painters. The principle of Mr. Harding's teaching was not the imitation of nature but the interpretation of it by the reasoning intelligence. His teaching was much enforced by his own great manual power, amounting, in its own way, to mastery. The defect of it was that he believed too absolutely in his own personal methods of inter-

preting nature and imposed them on others, whereas the variety and individuality of interpretations assure the perennial freshness of the fine arts. Mr. Harding's method produced in his own hands a striking and brilliant abridgment of nature, but ignored on principle both many truths and many beauties. (For example, he cut off the light sprays from trees to get more manageable masses.) A book of quite an opposite character is Mr. Ruskin's *Elements of Drawing*, which may be taken as an antidote; but for a landscape draftsman there is a peculiar danger in Mr. Ruskin's teaching, his interest in minute beauties, such as the curvature of leaves, of which the mind is unable to take cognisance if it has to comprehend the landscape as a whole. The kind of execution in pen and brush drawing recommended by Mr. Ruskin, which proceeds by a multitude of minute touches, was frequently used for drawing on wood in the third quarter of the nineteenth century, but is not the most rapid or effective. The best technical information about pen-drawing may be found in Mr. Joseph Pennell's work on the subject, but unfortunately the author, as a professional specialist in an art that has recently become a speciality, despises all the great artists of the past who used the pen

freely and innocently as an auxiliary instrument without any idea that they were trespassing on ground that did not belong to them. The different kinds of drawing with silver-point, chalk, lead-pencil, charcoal, etc., have been described at length and compared in the present writer's volume on *The Graphic Arts*. There are also various little treatises on elementary technical practice, usually written by artists, from which good practical hints may be obtained as to the use of instruments and materials. It is of the utmost importance to the student that he should have access to good and numerous examples of drawings by great masters. The public is not generally aware that there is a magnificent collection of drawings by the old masters in the British Museum, to which access may be easily obtained on compliance with a simple formality. Students ought to avail themselves of these treasures which are generally strangely neglected. A handbook to the Department of Prints and Drawings, with an introduction and notices of the various schools (Italian, German, Dutch and Flemish, Spanish, French, and English), has been compiled by Mr. Fagan, of the Museum, and published by Messrs. Bell & Sons. A selection of drawings by the Italian masters in the British

Museum has been published in autotype by Messrs. Chatto & Windus, with notes by Mr. Comyns Carr. The Autotype Company in England and Braun of Dornach on the Continent have published many reproductions of drawings by great masters, and are constantly adding to their number. These reproductions are often very near to the originals and are valuable in their absence. An autotype is usually incomparably better than any process reproduction that can be printed with typographic text. The commonest defect of autotypes is a certain heaviness, but this varies in degree with the facility of the subject, and any one accustomed to it may easily make the necessary allowances. Collections of drawings (or good reproductions, in their absence) ought to be made accessible to the public in all towns.[1] The student may look upon all original etchings as original drawings and study them as such. Rembrandt left many etchings and many drawings,—all equally his own. We cannot place

[1] Whilst revising these papers I receive a Manchester newspaper, in which it is stated that Rembrandt's etchings are not accessible to the public in that town, either in the originals or in reproductions. Yet Manchester is one of the most important provincial centres for the fine arts. A good set of photographs from Rembrandt's etchings, the size of the originals, was accessible in the public library of the little city of Autun long before the processes of photogravure came into general use.

its similarity to the Greek γράφειν. Littré affirms that the Latin words *scribere* and *scrobs* are also etymologically related to the verb *graver*, and it is evident that there is a close connection between *scrobs*, a furrow, and the hollow cuttings produced by an engraver with his tools. The *grave* in which the dead are buried is also connected with these words both by its meaning and its etymology. The idea of a furrow or cutting is essential to engraving, much more essential than any artistic idea. The rudest mark which is cut into the substance of anything is really an engraving, whilst the most admirable drawing which does not cut into the surface is not engraving at all. When Old Mortality deepened the inscriptions on the tombstones of the Covenanters he was strictly doing engravers' work, though of a coarse kind. In like manner the peoples of remote antiquity who chiselled their writing and drawing on slabs of stone, were in the strictest sense engravers, though the connection between their rude performance and the refined workmanship which is bestowed on a modern vignette may not at first sight be very obvious. The earliest known drawings are linear engravings of animals and even the human figure in dry point on bone or horn, executed by pre-historic men at a period of time so remote

from us that it cannot be fixed in a date, even approximately. Of course these engravings were done merely as drawings. No one knew that an incised line would *print* before the middle of the fifteenth century. On the other hand, a lithograph is not an engraving, though it will yield many copies, neither is a photograph, nor a photographic autotype; but the applications of photography which are known as *héliogravure* and *photogravure* are really engraving,[1] because in these processes the surface of the metal plate is eaten into or lowered. For the same reason etching may be correctly included under the generic term engraving, and an etcher is called in French a *graveur à l'eauforte*, an engraver by means of acid.

Engraving may then be defined as writing or drawing in which the marks are produced by removing a portion of the substance on which the writing or drawing is made, instead of by simply staining or discolouring it as ink and lead pencil do, or covering it with an opaque or transparent pigment as in oil-painting. Definition.

The idea of multiplication by printing, or by

[1] Except the Goupil process of photogravure now (1892) worked by MM. Boussod and Valadon, which is not engraving, but casting by electrotype.

casting (as in taking impressions from seals), is a mere accidental suggestion and not an essential part of the art. Engraving is still much used without any connection with printing, as in the chased ornamentation of silver plate, firearms, jewellery, and other objects of luxury. Engraving on marble has been revived in modern times for monumental purposes.

have to be left in relief, whilst the surface round them is cut away.

These primary technical conditions have an irresistible influence even upon the mental qualities exhibited in the different kinds of engraving. Each kind is favourable to certain mental states, and unfavourable to others, each being in itself an artistic as well as a technical discipline. A line-engraver will not see or think like an etcher, nor an etcher like an engraver in mezzotint; and the consequence of this difference is that the manner in which a line has to be cut has a great influence in determining the direction of artistic taste and feeling. Nor is this influence confined to the engravers themselves. The enormous multiplication of their works by printing makes engravers only second to writers in their power over public taste, which they can refine or vitiate by spreading refined or vulgar interpretations of pictures.

Engraving independent of painting.

There is no inherent reason why engraving should be used only to translate painting. The early engravers were often original artists who worked out designs of their own, but in course of time a commercial reason prevailed over originality. It was found that a well-known picture assured the sale of an engraving from it beforehand,

whereas an engraving which stood entirely on its own merits came into the world without advantages, and had its own way to make. Besides this, the engraver who copied a picture saved himself all the trouble of thinking out and composing the design, which he found ready to his hand. The same reasons have prevailed against original etching in our own day. There has been a great revival of etching in the second half of the nineteenth century, especially on the Continent, and many artists have acquired very great skill in this mode of engraving. It was hoped, at first, that they would employ their skill upon original works, but the convenience, both of publishers and etchers, soon led them to employ etching, as engraving had been employed before, almost exclusively in translating pictures. We cannot but deplore this subordination of engraving to painting; and when we recur to the great engravers of past times who composed and invented their own works, it is with a feeling of regret that they have left so very few successors.

Although we mentioned the four chief kinds of engraving in the order of what is usually considered to be their relative importance, putting line engraving in the first place and woodcut in the last, this is not the chronological order of their discovery.

Woodcut is the oldest kind of engraving from which impressions were printed, and must therefore be taken first in a treatise of this kind, which proposes to deal only with engraving for the press.

III

WOOD-ENGRAVING

It is natural that wood-engraving should have occurred first to the primitive mind, because the manner in which woodcuts are printed is the most obvious of all the kinds of printing. If a block of wood is inked with a greasy ink and then pressed on a piece of paper, the ink from the block will be transferred at once to the paper, on which we shall have a black patch exactly the size and shape of the inked surface. Now, suppose that the simple Chinese who first discovered this was ingenious enough to go a step further, it would evidently occur to him that if one of the elaborate signs, each of which in his own language stood for a word, were drawn upon the block of wood, in reverse, and then the whole of the white wood sufficiently cut away to leave the sign in relief, an image of it might be taken on the paper much more quickly

Origin of wood engraving.

than the sign could be copied with a camel-hair brush and Indian ink. No sooner had this experiment been tried and found to answer than block-printing was discovered, and from the printing of signs to the printing of rude images of things, exactly in the same manner, the step was so easy that it must have been made insensibly. Wood-engraving, then, is really nothing but that primitive block-cutting which prepared for the printer the letters in relief now replaced by movable types, and the only difference between a delicate modern woodcut and the rude letters in the first printed books is a difference of artistic skill and knowledge. In Chinese and Japanese woodcuts we can still recognise traditions of treatment which come from the designing of their written characters. The main elements of a Chinese or a Japanese woodcut, uninfluenced by European example, are dashing or delicate outlines and markings of various thickness, exactly such as a clever writer with the brush would make with his Indian ink or vermilion. Often we get a perfectly black blot, exquisitely shaped and full of careful purpose, and these broad vigorous blacks are quite in harmony with the kind of printing for which wood-engraving is intended.

It has not hitherto been satisfactorily ascer-

tained whether wood-engraving came to Europe from the East or was rediscovered by some European artificer. The precise date of the first European woodcut is also a matter of doubt, but here we have certain data which at least set limits to the possibility of error. European wood-engraving dates certainly from the first quarter of the fifteenth century. It used to be believed that a cut of St. Christopher, very rudely executed, and dated 1423, was the Adam of all our woodcuts, but subsequent investigations have shaken this theory. There is a cut in the Brussels library, of the Virgin and Child surrounded by four saints, which is dated 1418, but the composition is sufficiently elegant and the drawing refined enough to make the early date surprising, though it is received as authentic. The Virgin and Child of the Paris library is without date, but is supposed, apparently with reason, to be earlier than either of the two we have mentioned; and M. Delaborde has proved that two cuts were printed in 1406. The Virgin and Child at Paris may be taken as a good representative specimen of very early European wood-engraving. It is simple art, but not bad art. The forms are drawn in bold thick lines, and the black blot is used with much effect in the

The earliest European wood engraving.

Virgin and Child (facsimile of a woodcut of the fifteenth century).
The earliest wood-engraving known.

hollows and recesses of the design. Beyond this there is no shading. Rude as the work is, the artist has expressed exquisite maternal tenderness in the pressure of the Virgin's cheek to that of the Child, whilst the attitude of the Child itself, with its foot in its hand and its arm round the mother's neck, is most true to nature, as is the pose of the other foot against the mother's arm, and also the baby-like bending and twisting of the legs. The Virgin is crowned, and stands against a niche-like decoration with pinnacles as often seen in illuminated manuscripts. In the woodcut this architectural decoration is boldly but effectively drawn. Here, then, we have real art already, art in which appeared both vigour of style and tenderness of feeling.

The very earliest wood-engraving consisted of outlines and white spaces with smaller black spaces, but shading is rare or absent. Before passing to shaded woodcuts we may mention a kind of wood-engraving practised in the middle of the fifteenth century by a French engraver, often called Bernard Milnet, though his name is a matter of doubt, and by other engravers nearer the beginning of that century. This method is called the *criblé*, a word for which there is no convenient translation in English. It means, *riddled with small holes*, as a target

The criblé.

Christ after the Flagellation (woodcut executed in Flanders before 1440). Strong and pure outline with the addition of a little shading for local colour in the sky, and for modelling in the body and pillar.

may be riddled with small shot. The effect of light and dark is produced in this kind of engraving by sinking a great number of round holes of different diameters in the substance of the wood, which, of course, all come white in the printing ; it is, in short, a sort of stippling in white. When a more advanced

Star Drift.

This modern astronomical illustration shows the elements of wood-engraving in the white line, carried to great artistic perfection by Bewick and Linton, and in the round hole which by repetition gave the *criblé*.

kind of wood-engraving had become prevalent the *criblé* was no longer used for general purposes, but it was retained for the grounds of decorative wood-engraving, being used occasionally in borders for pages, in printers' marks, and other designs, which were survivals in black and white of the ancient art

of illuminating. Curiously enough, this kind of wood-engraving, though long disused for purposes of art, has of late years been revived with excellent effect for scientific purposes. It is now the accepted method of illustration for astronomical books. The black given by the untouched wooden blocks represents the night sky, and the holes, smaller or larger, represent in white the stars and planets of lesser or greater magnitude. The process is so perfectly adapted to this purpose, being so cheap, rapid, and simple, that it will probably never be superseded. The objections to it for artistic purposes are, however, so obvious that they were soon perceived even by the untrained critical faculty of the earlier workmen, who turned their attention to woodcut in simple black lines, including outline and shading. In early work the outline is firm and very distinct, being thicker in line than the shading, and in the shading the lines are simple, without cross-hatchings, as the workmen found it easier and more natural to take out a white line-like space between two parallel or nearly parallel black lines than to cut out the twenty or thirty small white lozenges into which the same space would have been divided by cross-hatchings. The early work would also sometimes retain the simple black patch which we find in Japanese wood-

Technical characteristics of early wood engraving.

cuts; for example, in the Christmas Dancers of Wohlgemuth all the shoes are black patches, though there is no discrimination of local colour in anything else. A precise parallel to this treatment is to be found in a Japanese woodcut of the Wild Boar and Hare given by Aimé Humbert in his book on Japan, in which the boar has a cap which is a perfectly black patch though all other local colour is omitted. The similarity of method between Wohlgemuth and the Japanese artist is so close that they both take pleasure in drawing thin black lines at a little distance from the patch and following its shape like a border. In course of time, as wood-engravers became more expert, they were not so careful to spare themselves trouble and pains, and then cross-hatchings were introduced, but at first more as a variety to relieve the eye than as a common method of shading. In the sixteenth century a simple kind of wood-engraving reached such a high degree of perfection that the best work of that time has never been surpassed in its own way. We intend very shortly to render full justice to the highly-developed skill of modern wood-engravers; but it is undeniable that in the sixteenth century the art stood more on its own merits than it does now, respected itself more, and affirmed itself without imitating other arts.

Wood-engraving in the 16th century.

Wood-engraving in the sixteenth century was much more conventional than it is in the present day, and this very conventionalism enabled it to express what it had to express with greater decision and power. The wood-engraver in those days was free from many difficult conditions which hamper his modern successor. He did not care in the least about aerial perspective, and nobody expected him to care about it; he did not trouble his mind about local colour, but generally omitted it, sometimes, however, giving it here and there, but only when it suited his fancy. As for light-and-shade, he shaded only when he wanted to give relief, but never worked out anything like a studied and balanced effect of light-and-shade, nor did he feel any responsibility about the matter. What he really cared for, and generally attained, was a firm, clear, simple kind of drawing, conventional in its indifference to the mystery of nature and to the poetic sentiment which comes to us from that mystery, but by no means indifferent to fact, of a decided and tangible kind. The wood-engraving of the sixteenth century was a singularly positive art, as positive as carving; indeed, most of the famous woodcuts of that time might be translated into carved panels without much loss of character. Their complete independence of

pictorial conditions might be illustrated by many examples. In Dürer's *Salutation* the dark blue of the sky above the Alpine mountains is translated by dark shading, but so far is this piece of local colour from being carried out in the rest of the composition that the important foreground figures, with their draperies, are shaded as if they were statues in plaster of Paris. Again, the sky itself is false in its shading, for it is without gradation, but the shading upon it has a purpose, which is to prevent the upper part of the composition from looking too empty, as well as to give relief to the mountains, and the conventionalism of wood-engraving was so accepted in those days that the artist could have recourse to this expedient in defiance alike of pictorial harmony and of natural truth. In Holbein's admirable series of small well-filled compositions, the *Dance of Death*, the

Dürer's *Salutation*.

The Old Woman (from Holbein's *Dance of Death*).

Holbein's *Dance of Death*.

firm and matter-of-fact drawing is accompanied by a sort of light-and-shade adopted simply for convenience, with as little reference to natural truth as might be expected in a stained-glass window.

Amman's handicrafts.

There is a most interesting series of little woodcuts drawn and engraved in the sixteenth century by J. Amman as illustrations of the different handicrafts and trades, and entitled *The Baker*, *The Miller*, *The Butcher*, and so on. Nothing is more striking in this valuable series than the remarkable closeness with which the artist observed everything in the nature of a hard fact, such as the shape of a hatchet or a spade; but he sees no mystery anywhere—he can draw leaves but not foliage, feathers but not plumage, locks but not hair, a hill but not a landscape. In the *Witches' Kitchen*, a woodcut by Baldung Grün of Strasburg, dated 1510, the steam rising from the pot is so hard that it has the appear-

Weaving (woodcut by J. Amman).

Baldung Grün.

ance of two trunks of trees denuded of their bark, and makes a pendant in the composition to a real tree on the opposite side which does not look more substantial. The clouds of steam round about the jet are like puddings. Nor was this a personal deficiency in Baldung Grün. It was Dürer's own way of engraving clouds and vapour, and all the engravers of that time followed it. Their conceptions were much more those of a carver than those of a painter. Dürer actually did carve in high relief, and Grün's *Witches' Kitchen* might be carved in the same manner without loss; indeed it has the appearance of an *alto-rilievo* with the ground tinted darker than the carvings. When the engravers were rather draftsmen than carvers, their drawing was of a decorative character. For example, in the magnificent portrait of Christian III. of Denmark by Jacob Binck, one of the very finest examples of old wood-engraving, the face and beard are drawn with few lines and very powerfully, but the costume is treated strictly as decoration, the lines of the patterns being all given, with as little shading as possible, and what shading there is is simple, without cross-hatching. Jacob Binck.

The perfection of simple wood-engraving having been attained so early as the sixteenth century, the art became extremely productive, and has been so

ever since. During the seventeenth and eighteenth centuries it still remained a comparatively severe and conventional form of art, because the workman shaded as much as possible either with straight lines or simple curves, so that there was never much appearance of freedom. Modern wood-engraving is quite a distinct art, being based on different principles, but between the two stands the work of an original genius, Bewick, who cannot be overlooked. He was born in 1753, and died in 1828. Although apprenticed to an engraver in 1767, he was never taught to draw, and got into ways and habits of his own which add to the originality of his work, though his defective training is always evident. His work is the more genuine from his habit of engraving his own designs, which left him perfect freedom of interpretation, but the genuineness of it is not only of the kind which comes from independence of spirit, it is due also to his fidelity to the technical nature of the process, a fidelity very rare in the art. The reader will remember that in wood-engraving every cutting prints white, and every space left untouched prints black. Simple black lines are obtained by cutting out white lines or spaces between them, and cross black lines have to be obtained by laboriously cutting out all the white lozenges between them. In Bewick's

Bewick.

cuts white lines are abundant and are often crossed, but black lines are never crossed; he is also quite willing to utilise the black space, as the Japanese wood-engravers and Dürer's master Wohlgemuth used to do. The side of the frying-pan in the vignette of the Cat and the Mouse is treated precisely on their principles, so precisely indeed that we have the line at the edge for a border. In the vignette of the Fisherman, at the end of the twentieth chapter of the *Memoir*, the space of dark shade under the bushes is left quite black, whilst the leaves and twigs, and the rod and line too, are all drawn in pure white lines. Bewick, indeed, was more careful in his adherence to the technical conditions of the art than any of the primitive woodcutters except those who worked in *criblé* and who used white lines as well as their dots. Such a thing as a fishing-net is an excellent test of this disposition. In the interesting series by J. Amman illustrating the crafts and trades of the sixteenth century, there is a cut of a man fishing in a river, from a small punt, with a net. The net comes dark against the light surface of the river, and Amman took the trouble to cut a white lozenge for every mesh. Bewick, in one of his vignettes, represents a fisherman mending his nets by the side of a stream. A long net is hung to dry on four upright

Amman and Bewick.

sticks, but to avoid the trouble of cutting out the lozenges, Bewick artfully contrives his arrangement of light-and-shade so that the net shall be in light against a space of black shade under some bushes. This permits him to cut every string of the net in white, according to his practice of using the white line whenever he could. He used it with great ability in the scales of his fish, but this was simply from a regard to technical convenience, for when he engraved on metal he marked the scales of his fish by black lines. These may seem very trifling considerations to persons unacquainted with the fine arts, who may think that it can matter little whether a fishing-net is drawn in black lines or in white, but the fact is that the entire destiny of wood-engraving has depended on preserving or rejecting the white line. Had it been generally accepted as it was by Bewick, original artists might have followed his example in engraving their own inventions, because then wood-engraving would have been a natural and comparatively rapid art; but since the black line has been preferred the art has become a handicraft, because original artists have not time to cut out thousands of little white spaces. The reader may at once realise for himself the tediousness of the process by comparing the ease with which one writes a page of manu-

White lines.

script with the labour which would be involved in filling up, with perfect accuracy, every space, however minute, which the pen had not blackened with ink.

Modern wood engraving.

The two centuries in which wood-engraving has developed itself most remarkably are the sixteenth and the nineteenth. We have described the character of sixteenth-century work, which was easy, as the work of that time had a limited purpose and a settled character. It may not appear so easy to describe the various and unsettled work of our own time, but it is animated by a leading idea, which is universality. Wood-engraving in the nineteenth century has no special character of its own, nothing like Bewick's work, which had a character derived from the nature of the process; but on the other hand, the modern art is set to imitate every kind of engraving and every kind of drawing. Thus we have woodcuts that imitate line-engraving, others that copy etching and even mezzotint, whilst others try to imitate the crumbling touch of charcoal or of chalk, or the wash of water-colour, or even the wash and the pen-line together. The art is put to all sorts of purposes; and though it is not and cannot be free, it is made to pretend to a freedom which the old masters would have rejected as an affectation. Rapid sketches are made on the block with the pen,

Its great variety.

and the modern wood-engraver sets himself patiently to cut out all the spaces of white, in which case the engraver is in reality less free than his predecessor in the sixteenth century, though the result has a false appearance of liberty. The woodcut is like a polyglot who has learned to speak many other languages at the risk of forgetting his own. And, wonderful as may be its powers of imitation, it can only approximate to the arts which it imitates; it can never rival each of them on its own ground. It can convey the idea of etching or water-colour, but not their quality; it can imitate the manner of a line-engraver on steel, but it cannot give the delicacy of his lines. Whatever be the art which the wood-engraver imitates, a practised eye sees at the first glance that the result is nothing but a woodcut. Therefore, although we may admire the suppleness of an art which can assume so many transformations, it is certain that these transformations give little satisfaction to severe judges. We are bound, however, to acknowledge that in manual skill and in variety of resource modern wood-engravers far excel their predecessors.

Pannemaker.

A Belgian wood-engraver, Stéphane Pannemaker, exhibited at the Salon of 1876 a woodcut entitled La Baigneuse, which astonished the art-world by the amazing perfection of its method, all the delicate

modelling of a nude figure being rendered by simple modulations of unbroken line. At an earlier date George Manson of Edinburgh (afterwards a painter of promise, who died prematurely) had engraved landscape very nearly on the same principle. He also practised the white line.

Mr. Birket Foster had at one time an influence over English wood-engraving of landscape almost comparable to that of Turner on plate-engraving, but however skilful the wood-engraver may be he can never really rival the extreme delicacy of tone in the best vignette engravings after Turner. However, in the cuts by Mr. Edmund Evans, Mr.

Whymper, and others, from Birket Foster there is sufficient delicacy to suggest, at least, the tones of landscape, and these engravers worked in perfect harmony with the draftsman. Many of Mr. Foster's subjects, especially the mountainous ones involving the representation of distant effects, offered difficulties that the early wood-engravers never attempted to contend against.

Modern woodcuts of figure-subjects for illustrations are frequently strong in outline, whilst the tonality is simplified by leaving white spaces, the rest being either in strong darks or one or two or three grays. An example of this kind of work is "The Capture of Cleveland," from *The Pirate.*

Both English and French publications abound in striking proofs of skill. The modern art, as exhibited in these publications, may be broadly divided into two sections, one depending upon line, in which case the black line of a pen sketch is carefully preserved, and the other depending upon tone, when the tones of a sketch with the brush are translated by the wood-engraver into shades obtained in his own way by the burin. The first of these methods requires extreme care, skill, and patience, but makes little demand upon the intelligence of the artist; the second leaves him more free to interpret, but he

Loch Achray.
Drawn by Birket Foster.
Engraved on wood by J. W. Whymper.

cannot do this rightly without understanding both tone and texture. The woodcuts in Doré's *Don Quixote* are done by each method alternately, many of the designs having been sketched with a pen upon the block, whilst others were shaded with a brush in Indian ink and white, the latter being engraved by interpreting the shades of the brush. In the pen drawings the lines are Doré's, in the brush drawings the lines are the engraver's. In the night scenes M. Pisan has usually adopted Bewick's system of white lines, the block being left untouched in its blackness wherever the effect permitted. Mr. W. J. Linton is also an admirable engraver in white line, and his cuts both of figure and landscape are a most profitable study for any one who cares to know the value of the white line as a means of artistic expression. Modern English wood-engraving shows to great advantage in such newspapers as the *Illustrated London News* and the *Graphic*, and also in vignettes for book illustration, which English artists usually execute with delicacy and taste. A certain standard of vignette engraving was reached by Mr. Edmund Evans in Mr. Birket Foster's edition of Cowper's *Task*, which is not likely to be surpassed in its own way, either for delicacy of tone or for careful preservation of the drawing.

Pisan.

Illustrated news-papers.

Vignettes.

The Capture of Cleveland (from *The Pirate*).

M. Derbier, a French wood-engraver, has attained remarkable perfection in the imitation of old line-engraving on copper. An important extension of wood-engraving in modern times has been due to the invention of compound blocks. Formerly a woodcut was limited in size to the dimensions of a block of boxwood cut across the grain, except in the primitive condition of the art, when commoner woods were used in the direction of the grain; but in the present day many small blocks are fitted together so as to form a single large one. They can be separated or joined together again at will, and it is this facility which has rendered possible the rapid production of large cuts for the newspapers, as many cutters work on the same subject at once, each taking his own section.

Compound blocks.

Process of modern wood-engraving.

The process of modern wood-engraving may be briefly described as follows: The surface of the block is lightly whitened with Chinese white so as to produce a light yellowish-gray tint, and on this the artist draws either with a pen if the work is intended to be in line, or with a hard-pointed pencil and a brush if it is intended to be in shade. If it is to be a line woodcut the cutter simply digs out the whites with a sharp burin or scalpel (he has these tools of various shapes and sizes), and that is all he

has to do; but if the drawing on the wood is shaded with a brush, then the cutter has to work upon the tones in such a manner that they will come relatively true in the printing. This is by no means easy, and the result has often been disappointment, besides which the artist's drawing is destroyed in the process, so that it became at one time customary to have the block photographed before the engraver touched it, when the drawing was specially worth preserving. This was done for Sir F. Leighton's illustrations to *Romola*. More recently it has been found possible to preserve the original drawing by executing it at first on paper and then photographing it upon the block; but the wood-engravers do not like to work upon these photographs so well as on the original drawings that used to be executed directly on the wood, and it is not the engravers who have encouraged the new practice, but publishers and artists, who were anxious to preserve valuable drawings. One objection is that draftsmen, for their own convenience, often draw on a scale much larger than that of the intended engraving, and then the photograph becomes only a reduction, and the execution suitable for a large drawing is neither simple enough nor sufficiently accentuated when put on a small block.

Photographing on wood.

Practical objection to it.

IV

COPPER AND STEEL PLATE-ENGRAVING

ENGRAVING on plates of copper and steel is the converse of wood-engraving in method. In line-engraving it is the line itself which is hollowed, whereas in the woodcut, as we have seen, when the line is to print black it is left in relief, and only white spaces and white lines are hollowed. There was no difficulty about discovering the art of line-engraving, which has been practised from the earliest ages. The prehistoric Aztec hatchet given to Humboldt in Mexico was just as really and truly *engraved* as a modern copper-plate with outlines after Flaxman or Thorwaldsen; the Aztec engraving is of course ruder than the European, but it is the same art. The important discovery which made line-engraving one of the multiplying arts was the discovery how to print an incised line, which would not occur to every one, and which

Prehistoric engraving.

in fact was hit upon at last by accident, and known for some time before its real utility was suspected. Line-engraving in Europe does not owe its origin to the woodcut, but to the chasing on goldsmiths' work. If the reader will look at any article of jewellery in which the metal is ornamented with incised designs, he will there see the true origin of our precious Dürers and Marcantonios. The history of the first plate-printing is as follows. The goldsmiths of Florence in the middle of the fifteenth century were in the habit of ornamenting their works by means of engraving, after which they filled up the hollows produced by the burin with a black enamel made of silver, lead, and sulphur, the result being that the design was rendered much more visible by the opposition of the enamel and the metal. An engraved design filled up in this manner was called a *niello*, and our modern door-plates are really *nielli* also, for in them too the engraved lines are filled with black. The word comes from *nigellum*, and simply refers to the colour of the enamel. Whilst a niello was in progress the artist could not see it so well as if the enamel were already in the lines, and on the other hand, he did not like to put in the hard enamel prematurely, as when once it was set it could not easily be got

Plate-printing.

Nielli.

out again. He therefore took a sulphur cast of his niello in progress, on a matrix of fine clay, and filled up the lines in the sulphur with lampblack, thus enabling himself to judge of the state of his engraving. At a later period it was discovered that a proof could be taken on damped paper by filling the engraved lines with a certain ink and wiping it off the surface of the plate, sufficient pressure being applied to make the paper go into the hollowed lines and fetch the ink out of them. This was the beginning of plate-printing, but nobody at first suspected the artistic and commercial importance of the discovery. The niello-engravers thought it a convenient way of proving their work, as it saved the trouble of the sulphur cast, but they saw no farther into the future. They went on engraving nielli just the same to ornament plate and furniture; nor was it until the next century that the new method of printing was carried out to its great and wonderful results. Even in our own day the full importance of it is only understood by persons who have made the fine arts a subject of special study.

Artistic importance of plate-printing.

There are, however, certain differences between plate-printing and block-printing which affect the essentials of art. When paper is driven *into* a line so as to fetch the ink out of it, the line may be of

unimaginable fineness, it will print all the same; but when the paper is only pressed *upon* a raised line, the line must have some appreciable thickness, so that the wood-engraving can never be so delicate as plate-engraving. Again, not only does plate-printing excel block-printing in delicacy; it excels it also in force and depth. There never was, and there will never be, a woodcut line having the power of a deep line in a plate, for in block-printing the line is only a blackened surface of paper, whereas in plate-printing it is a *cast* with an additional thickness of printing ink.

Having limited ourselves in this treatise to engraving for the press, we do not stay to enumerate the niello-engravers, but pass at once to the art of line-engraving for prints; and first let us describe the process, which is as simple in theory as it is difficult in practice. The most important of the tools used is the burin, which is a bar of steel with one end fixed in a handle rather like a mushroom with one side cut away, the burin itself being shaped so that the cutting end of it when sharpened takes the form of a lozenge. Burins are made in many varieties to suit individual tastes and the different uses to which they are applied, but most burins resemble each other in presenting the shape of

The burin.

a more or less elongated lozenge at the end where they are sharpened. The burin acts exactly like a plough: it makes a furrow and turns out a shaving of metal as the plough turns the soil of a field. The burin, however, is pushed while the plough is pulled, and this peculiar character of the burin as a pushed instrument at once establishes a wide separation between it and all the other instruments employed in the arts of design, such as pencils, brushes, pens, and etching needles. The manual difficulty which has to be overcome by the engraver is in making himself master of the burin, and in order to accomplish this he is obliged to go through a great deal of simply manual practice in cutting lines. The beginner learns to cut straight lines and curves of various degrees of depth, and to cross them so that the interstices may form squares, lozenges, triangles, etc. These exercises, after long practice, give a degree of manual skill, which has been often misemployed in ingenious trifling, to the detriment of true artistic quality, so that laborious men have wasted their time in cutting patterns like woven wire, and carefully inserting a dot in the middle of every lozenge or square. At one time it was customary amongst landscape-engravers to adopt a sort of coarse arrangement of thick wavy lines for

foreground work which required some manual skill, but had neither meaning nor science, as it expressed no thought, whilst it did not translate or imitate any of the truths of nature. Whilst avoiding these errors, which have been the bane of engraving, the student should train his hand and eye by copying portions of good prints directly on the metal, as a modern engraver cannot work in ignorance of the language of his art, though he may employ it in his own way afterwards. It is, however, unfortunately true that set methods, which may be called the business of engraving, have a tendency to become much more predominant than in the sister art of painting, so that real originality expresses itself much less frequently with the burin than with the brush.

Elements of burin engraving on metal.

The safe principle of execution in line-engraving and that generally followed, even by masters of the art, is to keep the plate pale for a long time, the dark lines not being nearly so dark as they are intended to be ultimately. When the engraver is sure of his drawing and his middle tints he may gradually deepen the darks by ploughing into the same lines over and over again with his burin, having test-proofs taken from time to time whilst his work is in progress. The most delicate light

work necessary to finish the modelling of faces may also be reserved until the end. In a word, the plate may be kept in middle tint with blank lights until it is ready for finishing at both ends of the chromatic scale.

When the surface of a metal plate is sufficiently polished to be used for engraving, the slightest scratch upon it will print as a black line, the degree of blackness being proportioned to the depth of the scratch. Most readers of these pages will possess an engraved plate from which visiting cards are printed. Such a plate is a good example of some elementary principles of engraving. It contains thin lines and thick ones, and a considerable variety of curves. An elaborate line-engraving, if it is a pure line-engraving and nothing else, will contain only these simple elements in different combinations. The real line-engraver is always engraving a line more or less broad and deep in one direction or another; he has no other business than this.

Gaillard's St. Sebastian.

There is a well-known and very beautifully executed plate from the picture of St. Sebastian by Gaillard, executed by the painter himself, who was also one of the most skilful engravers of modern times. A few proofs were taken when the plate

was half-finished. On comparing one of these with a proof of the final state we note the following differences :—

Early state of the plate.

Proof of the Plate in Progress.—This presents a speckled appearance as the small patches of shading are scattered all over the figure and background and have not been brought together. Dark shades are left of the same tone as light shades except some broken indications of darker work in the shadow cast by the head. The architecture of the background is confused and entirely pale. The mountainous distance is broken in patches of shade representing the ruggedness of the hills. In this condition the plate is spotty, feeble, and indistinct, so that an inexperienced critic would take it for bad work, but in reality the drawing and anatomy are already there, the subject only requiring clearing up and bringing together.

The finished plate.

Proof of the finished Plate.—Here the spotty appearance has entirely disappeared, because the patches of shade have been united. Dark shades have been much deepened and unified. All over the figure the modelling has been completed both in light and in darker work, the change being from the texture of a rough and unshapely cast to that of an ivory statuette. The locks of hair have been made

out in dark, the arrow-head, loin-cloth, and aureole being detached in light. The architecture has been made clear by the addition of defining lines on the principle of line and wash in the drawings of the old Italian masters, the wash being represented by the previous delicate shade.

On comparing other proofs of plates in progress with proofs after completion we find the same rule of advancement. The earliest states are usually pale and scattered in effect, whilst in the latest we have full oppositions of light and dark with added unity in the shading. In short, the first stage of an engraving consists in setting down broken indications of line, modelling, and chiaroscuro, all, of course, exactly in their proper places, whilst the second stage consists in bringing the previous work well together so as to remedy the broken appearance whilst the chiaroscuro is completed by the deepening of the shades and by adding delicacy of distinction to the palest tones.

Stages of engraving.

We may now pass to the early Italian and early German prints, in which the line is used with such perfect simplicity of purpose that the methods of the artists are as legible as if we saw them actually at work.

The student may soon understand the spirit and

technical quality of the earliest Italian engraving by giving his attention to a few of the series which used erroneously to be called the *Playing Cards of Mantegna*. "The series," says Professor Colvin, "consists of fifty pieces, divided into sets of ten each. Of these five sets, each is marked with an initial letter, A, B, C, D, E, and every print of the series carries besides an Arabic numeral, 1, 2, 3, up to 50. Only the numerical order, which shows how the series is meant to be arranged and studied, reverses the alphabetical order which corresponds with the respective dignity of the subject; thus Nos. 1-10 are lettered as class E, Nos. 11-20 as class D, and so on. This number, fifty, and this plan of subdivision by tens, are quite inconsistent with the supposed destination of the series as playing-cards; and so also are the subjects of the series. They represent a kind of encyclopædia of knowledge, proceeding upwards from earthly to transcendental things,—first, the various orders and conditions of men; second, the nine muses and Apollo; third, the seven liberal arts, with poetry, theology, and philosophy added to complete the group of ten; fourth, the four cardinal and three theological virtues, with three singular personifications or geniuses added to complete ten—a genius of time, a genius of the sun, and a genius of cosmos,

Early Italian line engraving.

the world; fifth, the planets, in their mythological, astrological, and astronomical signification, with the three outer spheres added to make up the ten—viz. the eighth, or sphere of the fixed stars, the Primum Mobile, or inclosing sphere, which by its rotation imparts rotation to the rest within, and the Prima Causa, or empyrean sphere, the unrevolving abiding place of Deity. The series is, therefore, as the most recent critics have called it, a moral and educational series, or instructive picture-book."

We have not space to enter into the controversy about the origin of these engravings. They are supposed to be Florentine; they are certainly Italian; and their technical manner is called that of Baccio Baldini, of whose biography nothing is known. But if the history of these engravings is obscure, their style is as clear as a style can be. There is not room for a moment's doubt about the artist's conception of his art. In all these figures the outline is the main thing, and next to that the lines which mark the leading folds of the drapery, lines quite classical in purity of form and severity of selection, and especially characteristic in this, that they are always really engraver's lines, such as may naturally be done with the burin, and they never imitate the freer line of the pencil or

Technical principles.

etching needle. As for shading, it is used in the greatest moderation with thin straight strokes of the burin, that never overpower the stronger organic lines of the design. Of chiaroscuro, in any complete sense, there is none. The sky behind the figures is represented by white paper, and the foreground is sometimes occupied by flat decorative engraving, much nearer in feeling to calligraphy than to modern painting. Sometimes there is a cast shadow, but it is not studied, and is only used to give relief. We may observe that in this early metal engraving the lines are often crossed in the shading, whereas in the earliest woodcuts they are not; the reason being that when lines are incised they can as easily be crossed as not, whereas, when they are reserved, the crossing involves much labour of a non-artistic kind. Here, then, we have pure line-engraving with the burin, that is, the engraving of the pure line patiently studied for its own beauty, and exhibited in an abstract manner, with care for natural form combined with inattention to the effects of nature. Even the forms, too, are idealised, especially in the cast of draperies, for the express purpose of exhibiting the line to better advantage. Such are the characteristics of those very early Italian engravings which were attributed erroneously to Mantegna. When

generation before Dürer, yet scarcely inferior to him in the use of the burin, though Dürer has a much greater reputation, due in great measure to his singular imaginative powers. Schongauer is the first great German engraver who is known to us by name, but he was preceded by an unknown German master, whom we now call the master of 1466, who had Gothic notions of art (in strong contrast to the classicism of Baccio Baldini), but used the burin skilfully in his own way, conceiving of line and shade as separate elements, yet shading with an evident desire to follow the form of the thing shaded, and with lines in various directions. Schongauer's art is a great stride in advance, and we find in him an evident pleasure in the bold use of the burin. Outline and shade, in Schongauer, are not nearly so much separated as in Baccio Baldini, and the shading, generally in curved lines, is far more masterly than the straight shading of Mantegna. Dürer continued Schongauer's curved shading, with increasing manual delicacy and skill; and as he found himself able to perform feats with the burin which amused both himself and his buyers, he overloaded his plates with quantities of living and inanimate objects, each of which he finished with as much care as if it were the most important thing

Dürer.

attention to the creases of a gaiter as to the development of a muscle; and though man was his main subject, he would study dogs with equal care (see the five dogs in the St. Hubert), or even pigs (see the Prodigal Son); and at a time when landscape painting was unknown he studied every clump of trees, every visible trunk and branch, nay, every foreground plant, and each leaf of it separately. In his buildings he saw every brick like a bricklayer, and every joint in the woodwork like a carpenter. The immense variety of the objects which he engraved was a training in suppleness of hand. His lines go in every direction, and are made to render both the undulations of surfaces (see the plane in the Melancholia) and their texture (see the granular texture of the stones in the same print).

Marcantonio.

From Dürer we come to Italy again, through Marcantonio, who copied Dürer, translating more than sixty of his woodcuts upon metal. It is one of the most remarkable things in the history of art, that a man who had trained himself by copying northern work, little removed from pure Gothicism, should have become soon afterwards the great engraver of Raphael, who was much pleased with his work and aided him by personal advice. Yet, although Raphael was a painter, and Marcantonio

his interpreter, the reader is not to infer that engraving had as yet subordinated itself to painting. Raphael himself evidently considered engraving a distinct art, for he never once set Marcantonio to work from a picture, but always (much more judiciously) gave him drawings, which the engraver might interpret without going outside of his own art; consequently Marcantonio's works are always genuine engravings, and are never pictorial. Marcantonio was an engraver of remarkable power. In him the real pure art of line-engraving reached its maturity. He retained much of the early Italian manner in his backgrounds, where its simplicity gives a desirable sobriety; but his figures are boldly modelled in curved lines, crossing each other in the darker shades, but left single in the passages from dark to light, and breaking away in fine dots as they approach the light itself, which is of pure white paper. A school of engraving was thus founded by Raphael, through Marcantonio, which cast aside the minute details of the early schools for a broad, harmonious treatment.

Raphael's influence.

We cannot here give a detailed account of the northern and southern schools of line-engraving, which, after Dürer and Marcantonio, developed themselves with great rapidity and were ennobled

by many famous names, but although we cannot give lists of these, we may direct the student to a school of engraving which marked a new development, the group known as the engravers of Rubens. That great painter understood the importance of engraving as a means of increasing his fame and wealth, and directed Vorsterman and others, as Raphael had directed Marcantonio. The theory of engraving at that time was that it ought not to render accurately the local colour of painting, which would appear wanting in harmony when dissociated from the hues of the picture; and it was one of the anxieties of Rubens so to direct his engravers that the result might be a fine plate independently of what he had painted. To this end he helped his engravers by drawings, in which he sometimes went so far as to indicate what he thought the best direction for the lines. Rubens liked Vorsterman's work, and scarcely corrected it, a plate he especially approved being Susannah and the Elders, which is a learned piece of work well modelled, and shaded everywhere on the figures and costumes with fine curved lines, the straight line being reserved for the masonry. Vorsterman quitted Rubens after executing fourteen important plates, and was succeeded by Paul Pontius, then a youth of twenty, who went on

The influence of Rubens.

Vorsterman and other engravers of Rubens.

engraving from Rubens with increasing skill until the painter's death. Boetius a Bolswert engraved from Rubens towards the close of his life, and his brother Schelte a Bolswert engraved more than sixty compositions from Rubens, of the most varied character, including hunting scenes and landscapes. This brings us to the engraving of landscape as a separate study. Rubens treated landscape in a very broad comprehensive manner, and Schelte's way of engraving it was also broad and comprehensive. The lines are long and often undulating, the cross-hatchings bold and rather obtrusive, for they often substitute unpleasant reticulations for the refinement and mystery of nature, but it was a beginning, and a vigorous beginning. The technical developments of engraving under the influence of Rubens may be summed up briefly as follows:—1. The Italian outline had been discarded as the chief subject of attention, and modelling had been substituted for it; 2. Broad masses had been substituted for the minutely finished detail of the northern schools; 3. A system of light and dark had been adopted which was not pictorial, but belonged especially to engraving, which it rendered (in the opinion of Rubens) more harmonious.

Results of his influence.

The history of line-engraving, from the time of

Rubens to the beginning of the nineteenth century, is rather that of the vigorous and energetic application of principles already accepted than any new development. From the two sources we have already indicated, the school of Raphael and the school of Rubens, a double tradition flowed to England and France, where it mingled and directed English and French practice. The first influence on English line-engraving was Flemish, and came from Rubens through Vandyke, Vorsterman, and others; but the English engravers soon underwent French and Italian influences, for although Payne learned from a Fleming, Faithorne studied in France under the direction of Philippe de Champagne the painter, and Robert Nanteuil the engraver. Sir Robert Strange studied in France under Philippe Lebas, and then five years in Italy, where he saturated his mind with Italian art. French engravers came to stay and work in England as they went to study in Italy, so that the art of engraving became in the eighteenth century a cosmopolitan language. In figure-engraving the outline was less and less insisted upon. Strange made it his study to soften and lose the outline. Meanwhile, the great classical Renaissance school, with Gérard Audran at its head, had carried forward the art of

English and French line-engraving.

Strange.

modelling with the burin, and had arrived at great perfection of a sober and dignified kind. Audran was very productive in the latter half of the seventeenth century, and died in 1703, after a life of severe self-direction in labour, the best external influence he underwent being that of the painter Nicolas Poussin. He made his work more rapid by the use of etching, but kept it entirely subordinate to the work of the burin. One of the finest of his large plates is St. John Baptizing, from Poussin, with groups of dignified figures in the foreground and a background of grand classical landscape, all executed with the most thorough knowledge according to the ideas of that time. The influence of Claude Lorrain on the engraving of landscape was exercised less through his etchings than his pictures, which compelled the engravers to study delicate distinctions in the values of light and dark. In this way, through Woollet and Vivarès, Claude exercised an influence on landscape engraving almost equal to that of Raphael and Rubens on the engraving of the figure, though he did not, like those painters, direct his engravers personally.

Audran.

Influence of Claude.

In the nineteenth century line-engraving has received both an impulse and a check, which by many is thought to be its death-blow. The im-

Line-engraving in the nineteenth century.

pulse came from the growth of public wealth, the increasing interest in art and the increase in the commerce of art, which now, by means of engraving, penetrated into the homes of the middle classes, as well as from the growing demand for illustrated books, which have given employment to engravers of first-rate ability. The check to line-engraving has come from the desire for cheaper and more rapid methods, a desire satisfied in various ways, but especially by etching and by the various kinds of photography. Nevertheless, the nineteenth century has produced most highly accomplished work in line-engraving, both in the figure and in landscape. Its characteristics, in comparison with the work of other centuries, are chiefly a more thorough and delicate rendering of local colour, light and shade, and texture. The elder engravers could draw as correctly as the moderns, but they either neglected these elements or admitted them sparingly, as opposed to the spirit of their art. If you look at a modern engraving from Landseer, you will see the blackness of a gentleman's boots (local colour), the soft roughness of his coat (texture), and the exact value in light and dark of his face and costume against the cloudy sky. Nay more, you will find

Characteristics of modern work.

every sparkle on bit, boot, and stirrup. Modern painting pays more attention to texture and chiaroscuro than classical painting did, so engraving has followed in the same directions. But there is a certain sameness in pure line-engraving which is more favourable to some forms and textures than to others. This sameness of line-engraving, and its costliness, have led to the adoption of mixed methods, which are extremely prevalent in modern commercial prints from popular artists. In the well-known prints from Rosa Bonheur, for example, by T. Landseer, H. T. Ryall, and C. G. Lewis, the tone of the skies is got by machine-ruling, and so is much undertone in the landscape; the fur of the animals is all etched, and so are the foreground plants, the real burin work being used sparingly where most favourable to texture. Even in the exquisite engravings after Turner, by Cook, Goodall, Wallis, Miller, Willmore, and others, who reached a degree of delicacy in light and shade far surpassing the work of the old masters, the engravers had recourse to etching, finishing with the burin and dry point. Turner's name may be added to those of Raphael, Rubens, and Claude in the list of painters who have had a special influence upon engraving.

Mixed methods.

Turner's influence upon engraving.

The speciality of Turner's influence was in the direction of delicacy of tone. In this respect the Turner vignettes to Rogers's poems were a high-water mark of human attainment, not likely ever to be surpassed.

The art of line-engraving is now practically extinct in England. Efforts have been made to keep it alive in France by the *Société Française de Gravure*, founded in 1868, and the *Société des Graveurs au Burin*, of more recent origin. The Government has also encouraged engraving by having plates made after pictures in the Louvre. The continued vitality of the art is shown by the perfect workmanship in the engraving by M. Adrien Didier from Raphael's *Three Graces*. The St. Sebastian of the late Ferdinand Gaillard has been already analysed to show the progress of a plate. These two plates are the high-water mark of the most modern European engraving. Still, it is to be regretted that the general ignorance of engraving, both in the public and amongst painters, should prevent the revival of the purest old line-engraving as an art independent of painting and nearer, in method and sentiment, to sculpture. In that art which nobody now practises (even Didier tries to follow the tonic values of painting), the first

Line-engraving in France.

Adrien Dider.

the labour of a translator. As a knowledge of technical subjects is not likely to become general, it is well to be strict and conservative in the use of terms. The word "etching" should be reserved for the corrosive processes. "Engraving" is a generic term including etching as one of its specialities.)

Preparation of the plate.

To prepare a plate for etching it is first covered with etching-ground, a composition which resists acid. The qualities of a ground are to be so adhesive that it will not quit the copper when a small quantity is left isolated between lines, yet not so adhesive that the etching point cannot easily and entirely remove it; at the same time a good ground will be hard enough to bear the hand upon it, or a sheet of paper, yet not so hard as to be brittle.

Etching-ground.

Bosse's ground.

The best is that of Abraham Bosse, which is composed as follows:—Melt two ounces of white wax; then add to it one ounce of gum-mastic in powder, a little at a time, stirring till the wax and the mastic are well mingled; then add, in the same manner, an ounce of bitumen in powder. There are three different ways of applying an etching-ground to a plate. The old-fashioned way was to wrap a ball of the ground in silk, heat the plate, and then rub the ball upon the surface, enough of the ground to

cover the plate melting through the silk. To equalise the ground a dabber was used, which was made of cotton-wool under horse-hair, the whole inclosed in silk. This method is still used by many artists, from tradition and habit, but it is far inferior in perfection and convenience to that which we will now describe. When the etching-ground is melted, add to it half its volume of essential oil of lavender, mix well, and allow the mixture to cool. You have now a paste which can be spread upon a cold plate with a roller; these rollers are covered with leather and made (very carefully) for the purpose. You first spread a little paste on a sheet of plate-glass (if too thick, add more oil of lavender and mix with a palette knife), and roll it till the roller is quite equally charged all over, when the paste is easily transferred to the copper, which is afterwards gently heated to expel the oil of lavender. In both these methods of grounding a plate the work is not completed until the ground has been smoked, which is effected as follows. The plate is held by a hand-vice if a small one, or, if large, is fixed at some height, with the covered side downwards. A smoking torch, composed of many thin bees-wax dips twisted together, is then lighted and passed repeatedly under the plate in every direction, till

Covering the plate.

Smoking the plate.

the ground has incorporated enough lamp-black to blacken it. The third way of covering a plate for etching is to apply the ground in solution as collodion is applied by photographers. The ground may be dissolved in chloroform, or in oil of lavender. The plate being grounded, its back and edges are protected from the acid by Japan varnish, which soon dries, and then the drawing is traced upon it. The best way of tracing a drawing is to use sheet gelatine, which is employed as follows. The gelatine is laid upon the drawing, which its transparence allows you to see perfectly, and you trace the lines by scratching the smooth surface with a sharp point. You then fill these scratches with fine black-lead, in powder, rubbing it in with the finger, turn the tracing with its face to the plate, and rub the back of it with a burnisher. The black-lead from the scratches adheres to the etching-ground and shows upon it as pale gray, much more visible than anything else you can use for tracing. Then comes the work of the etching-needle, which is merely a piece of steel sharpened more or less. Turner used a prong of an old steel fork which did as well as anything, but neater etching-needles are sold by artists' colourmakers. The needle removes the ground and lays the copper bare. Some artists

Liquid grounds.

Tracing.

The needle.

sharpen their needles so as to present a cutting edge which, when used sideways, scrapes away a broad line; and many etchers use needles of various degrees of sharpness to get thicker or thinner lines. It may be well to observe, in connection with this part of the subject, that whilst thick lines agree perfectly well with the nature of woodcut, they are very apt to give an unpleasant heaviness to plate-engraving of all kinds, whilst thin lines have generally a clear and agreeable appearance in plate-engraving. Nevertheless, lines of moderate thickness are used effectively in etching when covered with finer shading, and very thick lines indeed were employed with good results by Turner when he intended to cover them with mezzotint, and to print in brown ink, because their thickness was essential to prevent them from being overwhelmed by the mezzotint, and the brown ink made them print less heavily than black. Etchers differ in opinion as to whether the needle ought to scratch the copper or simply to glide upon its surface. A gliding needle is much more free, and therefore communicates a greater appearance of freedom to the etching, but it has the inconvenience that the etching-ground may not always be entirely removed (though it may seem to be), and then the lines may

Thick and thin lines.

be defective from insufficient biting. A scratching needle, on the other hand, is free from this serious inconvenience, but it must not scratch irregularly so as to *engrave* lines of various depth. The *biting* in former times was generally done with a mixture of nitrous acid and water, in equal proportions; but in the present day a Dutch mordant is a good deal used, which is composed as follows:—Hydrochloric acid, 100 grammes; chlorate of potash, 20 grammes; water, 880 grammes. To make it, heat the water, add the chlorate of potash, wait till it is entirely dissolved, and then add the acid. The nitrous mordant acts rapidly, and causes ebullition; the Dutch mordant acts slowly, and causes no ebullition. The nitrous mordant widens the lines; the Dutch mordant bites in depth, with a minimum of widening.[1] The time required for both depends

Biting.

[1] In my positive process on a silvered plate, the Dutch mordant widens the lines slowly but very much. This is due to the extreme tenuity of the wax ground, and is essential to the power of the etching as the needle used is very sharp. But I do not advise the reader to trouble himself about my positive process, which, though perfect in itself and technically sure, is hardly practicable on account of the extreme certainty and decision that it requires in the artist. Mr. Herkomer's positive process is much easier. He first covers the plate with ordinary etching-ground, without smoking, then dabs on that with the finger a coat of the white grease-paint used by actors. The purpose of this is to retain zinc white, which is applied to it in powder with a camel-hair brush. Result, a white surface on which the lines show dark.

upon temperature. A mordant bites slowly when cold, and more and more rapidly when heated. To obviate irregularity caused by difference of temperature, the writer of these pages has found it a good plan to heat the Dutch mordant to 95° Fahr. by lamps under the bath (for which a photographer's porcelain tray is most convenient), and keep it steadily to that temperature; the results may then be counted upon; but whatever the temperature fixed upon, the results will be regular if it is regular. To get different degrees of biting on the same plate the lines which are to be pale are "stopped out" by being painted over with Japan varnish or with etching-ground dissolved in oil of lavender, the darkest lines being reserved to the last, as they have to bite longest. When the acid has done its work properly the lines are bitten in such various degrees of depth that they will print with the degree of blackness required, and if some parts of the subject require to be made paler, they can be lowered by rubbing them with charcoal and olive oil; but as this produces the same effect as wear by much printing it is better to compress the copper with the burnisher which narrows the lines. If they have to be made deeper they can be rebitten or deepened

with a burin, or covered with added shading. The burin is difficult to use if the lines are very sinuous, as they often are in free etching, and if it is employed to deepen straight or curved lines it alters their quality so that it is necessary to rebite them afterwards, to restore it. Rebiting is done with the roller above mentioned, which is now charged very lightly with paste and rolled over the copper with no pressure but its own weight, so as to cover the smooth surface, but not fill up any of the lines. The oil of lavender is then expelled as before by gently heating the plate, but it is not smoked. The lines which require rebiting may now be rebitten, and the others preserved against the action of the acid by stopping out. These are a few of the most essential technical points in etching, but there are many matters of detail for which the reader is referred to the special works on the subject.

Reducing.

Rebiting.

Safe practice in etching.

As a general rule, the safest practice in etching is to depend rather on differences of thickness in the points used than on differences of biting, and to resort to few bitings, neither very pale nor very deep, but so as to give a pure black line not widened by the acid.[1] The etcher may afterwards

[1] This may seem in contradiction to the practice of Samuel Palmer who was an advocate of frequent stoppings-out, and very

go down to any depth he pleases by rebiting the lines which require emphasis, and as for very pale lines and tints he can add them afterwards with the dry point. If he prefers to etch the pale lines rather than use the dry point he can cover the plate again with etching-ground; but there is a risk that the edges of the deep lines may be attacked by the acid. To obviate this the present writer has found it convenient to fill all lines already bitten with wax mixed with lamp-black or wax mixed with gold bronze-powder before applying the etching-ground with the roller. This ground is not smoked, and the lines show through it plainly, whilst they are perfectly protected against any involuntary rebiting.[1] This method might be especially useful for etchings

A protective process.

numerous bitings. He mentioned with approval one instance in which a plate had been bitten seventy times. This may succeed in very skilful or experienced hands, but painters who etch little would usually be unable to foresee the exact subdivisions of depth that these numerous bitings would obtain. Besides this, the present writer has demonstrated by practical evidence that a fine line bitten deeply and with a mordant that does not enlarge, yields in printing no more black than if it had been bitten to, say, half its depth, because a deep fine line retains, in the press, a considerable portion of its ink.

[1] The way of filling the lines is to heat the plate and then roughly paint all over it with the heated mixture of wax and bronze (or wax and lamp-black as the case may be). The superfluous wax may then be removed with the edge of a wooden paper-cutter, leaving the lines filled and clearly visible. If bronze is used the plate should be first stained dark by being previously plunged in the

begun after Turner's manner in powerful organic lines, and finished with shading cast over these as the mezzotint was in the plates of Turner's *Liber Studiorum*.

The two countries in which etching has been most practised are Holland and France. It has also been successfully practised in Italy, Germany, and England, but not to so great an extent. It has resembled line-engraving in receiving a powerful impulse from celebrated painters, but whereas with the exception of Albert Dürer the painters have seldom been practical line-engravers, they have advanced etching not only by advice given to others but by the work of their own hands. Rembrandt did as much for etching as either Raphael or Rubens for line-engraving; and in landscape the etchings of Claude had an influence which still continues, both Rembrandt and Claude being practical workmen in etching, and very skilful workmen. And not only these, but many other eminent painters have practised etching successfully, each in his own way. Ostade, Ruysdael, Berghem, Paul Potter, Karl Dujardin, etched as they painted, and so did a

Influence of Rembrandt and Claude.

Dutch mordant when the bronze shows in light. If lamp-black is mixed with the wax the plate is left of its natural colour. It is then covered with etching-paste by means of the roller, and slightly heated but not smoked.

greater than any of them, Vandyke. In the earlier part of the present century etching was almost a defunct art, except as it was employed by engravers as a help to get faster through their work, of which "engraving" got all the credit, the public being unable to distinguish between etched lines and lines cut with the burin. During the last twenty or thirty years, however, there has been a great revival of etching as an independent art, a revival which has extended all over Europe, though France has had by far the largest and most important share in it. It was hoped, at the beginning of this revival, that it would lead to the production of many fine original works; but the commercial laws of demand and supply have unfortunately made modern etching almost entirely the slave of painting. Nearly all the clever etchers of the present day are occupied in translating pictures, which many of them, especially Unger, Jacquemart, Flameng, and Rajon, have done with remarkable ability, even to the very touch and texture of the painter. The comparative rapidity of the process, and the ease with which it imitates the manner of painters, have caused etching to be now very generally preferred to line-engraving by publishers for the translation of all pictures except those belonging to a severe and classical style of art, for

The revival of etching.

which the burin is, and will always remain, better adapted than the etching-needle.

Yet, notwithstanding the present commercial predominance of etching from pictures, there are still some artists and eminent amateurs who have cultivated original etching with success. Mr. Seymour Haden, Mr. Whistler, Mr. Samuel Palmer, and others in England; MM. Bracquemond, Daubigny, Charles Jacque, Appian, Lalanne, and others on the Continent, besides that singular and remarkable genius, Charles Méryon, have produced original works of very various interest and power. Etching clubs, or associations of artists for the publication of original etchings, have been founded in England, France, Germany, and Belgium. The real difficulty of the art, and its apparent facility, have led to much worthless production, but this ought not to make us overlook what is unquestionably valuable.

Styles of etching.

The following is a brief analysis of different styles of etching:—1. *Pure Line.*—As there is line-engraving, so there is line-etching; but as the etching-needle is a freer instrument than the burin, the line has qualities which differ widely from those of the burin line. Each of the two has its own charm and beauty; the liberty of the one is charming, and the restraint of the other is admirable also

in its right place. In line-etching, as in line-engraving, the great masters purposely exhibit the line and do not hide it under too much shading. 2. *Line and Shade.*—This answers exactly in etching to Mantegna's work in engraving. The most important lines are drawn first throughout, and the shade thrown over them like a wash with the brush over a pen sketch in indelible ink. 3. *Shade and Texture.*—This is used chiefly to imitate oil-painting. Here the line (properly so called) is entirely abandoned, and the attention of the etcher is given to texture and chiaroscuro. He uses lines, of course, to express these, but does not exhibit them for their own beauty; on the contrary, he conceals them.

Of these three styles of etching the first is technically the easiest, and being also the most rapid, is adopted for sketching on the copper from nature; the second is the next in difficulty; and the third the most difficult, on account of the biting, which is never easy to manage when it becomes elaborate. The etcher has, however, many resources; he can make passages paler by burnishing them, or by using charcoal, or he can efface them entirely with the scraper and charcoal; he can darken them by rebiting or by regrounding the plate and adding fresh work; and he need not run the risk of biting

the very palest passages of all, because these can be easily done with the dry point, which is simply a well-sharpened stylus used directly on the copper without the help of acid. It is often asserted that any one can etch who can draw, but this is a mistaken assertion likely to mislead. Without requiring so long an apprenticeship as the burin, etching is a very difficult art indeed, the two main causes of its difficulty being that the artist does not see his work properly as he proceeds, and that mistakes or misfortunes in the biting, which are of frequent occurrence to the inexperienced, may destroy all the relations of tone.

Principles of original etching.

It is desirable that a school of original etching should be founded as much as possible on intelligent expression by line rather than on texture and full chiaroscuro. In pure line-etching shade may be summarised and suggested as in pen-drawing, by leaving all light shades white, and by representing the others with a few broad divisions and no subdivisions, say, three or four grays and black. In work of this kind linear expression is the artistic purpose, whilst shading is quite secondary, though it may be powerfully and effectively suggested. In Mr. Haden's etchings the bitings are rarely delicate, they are usually rather deep, and light tones are

suggested more by the openness of the work than by tender shades. Mr. Haden has also a tendency to represent the darker greens and purples of nature by black, which, though not strictly accurate in tonality, is permissible and intelligible. The etchings of Mr. Ernest George are also linear with little shading, and so were those of Maxime Lalanne.

The publication of etchings.

As to the publication of etchings, it has been suggested by Mr. Herkomer that instead of arbitrarily fixing the limit of "proofs" at a certain number of impressions, calling those that come after them "prints," we should henceforth call "proofs" the impressions from the naked copper, and reserve the inferior term for all impressions that are taken after steeling. This proposal is excellent, because there is really an important difference in quality between an impression from the copper itself and one from the steeled surface. The first might be called a *copper-proof*. Such a term might not be at first intelligible to buyers, but it would excite their curiosity, so that they would speedily learn its meaning. The present distinction is quite arbitrary, as there is no difference of quality between proofs and prints from steeled plates, but only a difference of price. When plates are published at a high price for collectors the edition ought to be strictly limited

Copper-proofs.

Limited editions.

to what the copper will bear without the slightest perceptible deterioration, and there ought not to be any steeling whatever.

The morality of printing.

A heated controversy was once raised about the morality of printing, in which the most excited disputants were certain journalists who condemned all printing as dishonest whenever the workman (even under the etcher's direction) did anything to help the plate. The truth is that when the etcher leaves something to the printer, there can be no moral delinquency if the workman's share is clear, simple, and certain, and can be determined beforehand by the artist. All that an intelligent etcher expects a printer to do is to impart a certain richness and softness of quality to the impressions, and this is not more dishonest than an author's expectation that the printer will lend more clearness and authority to his literary performance than it ever could have in manuscript.

Extremely artificial printing.

Extremely artificial printing could not be repeated with certainty through an entire edition. It may be possible for a few proofs, taken by the etcher himself, and therefore honestly his own.

Of late years certain etchers and printsellers have encouraged a kind of printing in which far too much is entrusted to the workman, who almost does the

shading with ink left on the plate, or pumped up out of the lines by the process known as *retroussage*.[1] The abusive intrusion of the printer in the shading of plates produced a reaction in the opposite extreme, that of absolutely naked printing, in which the copper is polished with whitening every time a proof is taken, so that the lines come perfectly sharp and hard like the letters on visiting cards, which are printed exactly in that manner. The two extremes of naked and artificial printing are almost equally fatal to the beauty of a proof. In the finest printing, that of Goulding for instance, shades are not added to the artist's work, but it is treated tenderly and with consideration; it is neither stripped nor disguised. In a fine proof there is a certain mellowness of quality that a good judge of printing recognises at a glance, yet at the same time there is no smudge. The etcher himself cannot give this mellowness, though he may count upon it. He ought, however, to work out his full scheme of light-and-shade, because, as Samuel Palmer pointed out, there is a luminous quality in the minute spaces between the lines of shading in etched work that

Retroussage.

Naked printing.

Quality of a fine proof.

[1] This consists in passing a very soft rag lightly over the plate till the ink comes up out of the lines and spreads itself over the small spaces of polished copper between them.

can never be given by a smudge of printer's ink. In this matter, as in all operations affecting the fine arts, there is need of delicacy and care. A plate may be misrepresented by hard, mechanical treatment, and it may be misrepresented by covering it with blacking.

Aquatint. *Aquatint.*—This is a kind of etching which successfully imitates washes with a brush. There are many ways of preparing a plate for aquatint, but the following is the best: Have three different solutions of rosin in rectified alcohol, making them of various degrees of strength, but always thin enough to be quite fluid, the weakest solution being almost colourless. First pour the strongest solution on the plate. When it dries it will produce a granulation; and you may now bite as in ordinary etching for your darker tones, stopping out what the acid is not to operate upon, or you may use a brush charged with acid, perchloride of iron being a very good mordant for the purpose. After cleaning the plate, you proceed with the weaker solutions in the same way, the weakest giving the finest granulation for skies, distances, etc. The process requires a good deal of stopping-out, and some burnishing, scraping, etc., at last. It has been employed very successfully by M. Brunet-Debaines in his plates from Turner,

especially in *Agrippina landing with the Ashes of Germanicus*. Aquatint may be effectively used in combination with line-etching, and still more harmoniously with soft ground-etching in which the line imitates that of the lead pencil.

Tendency of engraving to tone and texture.

The natural tendency of the three kinds of engraving we have studied is from line to shade and from shade to texture. The perfection of line is seldom maintained when the attention of artists has been directed to the other elements, for line is a separate study. Shade is its enemy, but line may still survive under a veil of half-shade. When chiaroscuro becomes complete the delicacy of line, which is an abstraction, is nearly lost; and when texture becomes an object also, the line is lost altogether. This appears to be the natural law of development in the graphic arts, and it is an approach to nature, which is all shade and texture without line; yet the pure line is a loss in art, from its ready expression of the feeling of the artist as well as for its quick and clear statement of positive facts, and the loss of it is one for which more natural truth is not always a compensation.

fit condition to be worked upon. When sufficiently prepared it presents a fine soft-looking and perfectly even grain, and if in this state a proof is taken from it by the usual process of copper-plate printing, the result is nothing but the richest possible black. The engraver works from dark to light by removing the grain with a scraper, and exactly in proportion as he removes it the tint becomes paler and paler. Pure whites are got by scraping the grain away entirely, and burnishing the place. As the process is from dark to light, the engraver has to be very cautious not to remove too much of his grain at once. He proceeds gradually from dark to half-dark, from half-dark to middle-tint, from middle-tint to half-light, and from half-light to light. He has nothing to do with line, but thinks entirely of masses relieved from each other by chiaroscuro. When the work is good the result is soft and harmonious, well adapted to the interpretation of some painters, but not of all. As the art has been most practised in England, some of its most successful work has been employed in the translation of English artists. More than a hundred engravers in mezzotint employed themselves on the portraits of Sir Joshua Reynolds, and the best of their works are now valued as the classics of the art, which is connected with the name of Reynolds just

The process.

The engravers of Reynolds.

as line-engraving is connected with that of Raphael. Turner and Constable's landscapes were also admirably engraved in mezzotint by Lupton and others, Turner himself being a good mezzotint engraver, though he practised the art little. Mezzotint engraving was continued in England by Cousens and others, and in the latter part of the nineteenth century there has been a revival of mezzotint as an original art, chiefly by Mr. Haden and Mr. Herkomer. Mezzotint engraving would no doubt be more resorted to than it is if the plates yielded larger editions, but unfortunately they soon show signs of wear.

Lupton.

Cousens.

Dry point.

Dry point is really nothing but mezzotint in line. As the point of the stylus makes its scratch on the copper, it raises a bur, which retains the ink in the printing just as the bur from the cradle does in mezzotint. The bur of dry point also wears away fast, and yields but few impressions.

Copper, steel, and zinc are the metals chiefly used for engraving. Steel is less employed than formerly, because copper is now covered with a coat of steel by the electrotype process, which enables it to resist printing indefinitely, as the steel can be renewed at will. Zinc is similarly coated with copper, and sometimes used for small editions.

When the electrotype gives an imperfect result (as usually happens) it is worked upon, not by the sun, but by the hand of a human engraver.

Hélio-gravure.

The process of *héliogravure* as practised by Amand-Durand was first photography on a sensitised etching-ground. After washings, the copper was left bare in the lines and exposed to the action of a mordant. The plate was then cleaned and covered for rebiting with an ordinary etching-ground, the whole subsequent process being exactly that of common etching, and concluding with the burin or the dry point. The Amand-Durand *héliogravures* are therefore quite strictly etchings on copper. Dujardin's *héliogravures*, different, I believe, in the ground and mordant, are also unquestionably etchings. It would, however, be misleading to call them so, because the word is usually understood to mean *an engraving by corrosion in which the lines were drawn by the artist himself on metal and also bitten by him.* When Amand-Durand made his facsimiles from Rembrandt we could not call them etchings by the Dutch master, who did not bite the coppers, and it would be misleading to call them etchings by the Frenchman, who drew nothing. A *héliogravure* is usually an etching of which the drawing has been done by an artist, then transferred to a plate with the help

Amand-Durand.

Dujardin.

What is understood by "etching."

of photography and bitten by another operator. It is now a common practice to draw in ink on paper and have the work reproduced in *héliogravure*. The result cannot truthfully be called an etching by the draftsman, because he did not etch but only drew, as he had no control over the biting.

Drawing for héliogravure.

There are several photographic processes by which, with the help of electrotype, blocks are produced for printing along with letterpress. These are of two kinds, one (the simpler and more satisfactory) copies lines whilst the other imitates tones. The first is usually employed for reducing and copying pen-drawings so that they may be printed like facsimile woodcuts, the second (by the interposition of gauze when the subject is photographed) translates tones into innumerable dots, and can be applied either to pictures or to photographs from nature. It is now extensively used for both purposes. The linear process usually gives the more perfect results, and has been practised with success by Chefdeville and others. Meisenbach of Vienna and Guillaume of Paris have done acceptable work with the tone process, whilst Boussod and Valadon have employed it largely for the reproduction of contemporary paintings. These processes are not artistically substitutes for wood-engraving, which has qualities that

Process blocks.

The linear process.

The tone process.

they cannot rival, but commercially they are substitutes for it in the sense that they are now frequently employed instead of woodcuts for purposes of cheap illustration.

Artistic influence of processes.

The artistic influence of processes has been extremely important. They have largely encouraged the practice of drawing, whilst imposing upon it certain restrictions. The special influence of the linear typographic process has been to revive pen-drawing on a most extensive scale and to create a demand for clever and brilliant manual execution. This demand has led to the production of the pen-specialist, the professional pen-draftsman who knows his business, and is indifferent to the advice of painters, whom he looks upon as ignorant of his craft. On the other hand, the tone process is doing good service in providing cheap memoranda of works in painting, sculpture, and architecture, the last by the reproduction of photographs taken directly from the buildings, or by copying the designs of the architectural draftsman. All these things, considered simply as memoranda, have considerable value as documents for critical or historical use, because (within certain limits that we know beforehand) they can be absolutely relied upon. So much cannot be said of woodcuts, though wood-engraving, as an art, is far superior to these processes.

The pen-specialist.

Cheap memoranda.

VIII

BOOKS ON ENGRAVING

AUTHORITIES.—A real knowledge of engraving can only be attained by a careful study and comparison of the prints themselves, or of accurate facsimiles, so that books are of little use except as guides to prints when the reader happens to be unaware of their existence, or else for their explanation of technical processes. The department of art-literature which classifies prints is called *Iconography*, and the classifications adopted by iconographers are of the most various kinds. For example, if a complete book were written on Shakespearian iconography it would contain full information about all prints illustrating the life and works of Shakespeare, and in the same way there may be the iconography of a locality or of a single event. The history of engraving is a part of iconography, and there are already various histories of the art in different languages. In

England Mr. W. Y. Ottley wrote an *Early History of Engraving*, published in two volumes 4to, 1816, and began what was intended to be a series of notices on engravers and their works. Mr. H. Ottley has also written upon the same subject. The facilities for the reproduction of engravings by the photographic processes have of late years given an impetus to iconography. One of the most reliable modern writers on the subject is M. Georges Duplessis, the keeper of prints in the National Library of France. He has written the *History of Engraving in France*, and has published many notices of engravers to accompany the reproductions by M. Amand-Durand. He is also the author of a useful little manual entitled *Les Merveilles de la Gravure*. Count de Laborde collected materials for a history of wood-engraving, and began to publish them, but the work advanced no further than a first number. Jansen's work on the origin of wood and plate engraving, and on the knowledge of prints of the fifteenth and sixteenth centuries, was published at Paris in two volumes 8vo in 1808. Didot's *Essai typographique et bibliographique sur l'histoire de la gravure sur bois* was published in Paris (8vo) 1863. A *Treatise on Wood Engraving*, by John Jackson, appeared in 1839, and a second edition of the work

in 1861. A good deal of valuable scattered information about engraving is to be found in the back numbers of the principal art periodicals, such as the *Gazette des Beaux-Arts*, *L'Art*, and the *Portfolio*. In the year 1877 Professor Colvin published a series of articles in the *Portfolio* on "Albert Dürer, His Teachers, His Rivals, and His Followers," which contain in a concentrated form the main results of what is known about the early engravers, with facsimiles from their works. Professor Ruskin also published a volume on engraving, entitled *Ariadne Florentina*, in which the reader will find much that is suggestive; but he ought to be on his guard against certain assertions of the author, especially these two, — (1) that all good engraving rejects chiaroscuro, and (2) that etching is an indolent and blundering process at the best. The illustrations to his volume are of unequal merit: the facsimiles from Holbein are good; the reductions of early Italian engravings are not good. The reader will find information about engraving, and many facsimiles of old woodcuts, in the different volumes by Paul Lacroix on the Middle Ages and the Renaissance, published by Firmin Didot; the information may be relied upon, but the facsimiles, though effective, are not always perfect. Roret's *Collection*

de Manuels formant une Encyclopédie des Sciences et des Arts contains a pocket volume on engraving which is full of useful practical information, and another similar volume on plate-printing, also very useful to engravers on metal, who ought always to understand printing; these volumes may be had separately. Etching has been the subject of several different treatises. The oldest is that of Abraham Bosse, published at Paris in 1645, 8vo, and in 1701, 12mo. The revival of etching in our own day has been accompanied by the publication of various treatises. The first was a short account of the old process by Mr. Alfred Ashley; then came the French *brochure* of M. Maxime Lalanne; then *Etching and Etchers* (450 pages, in the stereotyped edition) by the writer of this article, and a smaller treatise, *The Etcher's Handbook*, by the same. These were followed by another short French handbook, that of M. Martial. In the year 1892, Professor Herkomer published his Oxford lectures on Etching and Mezzotint in a volume and announced two new processes. In the same year Mr. W. J. Linton, the distinguished American wood-engraver, published a volume on his own art. For information about the states of plates, their prices, their authenticity and history, the student ought to con-

sult the best catalogue-markers, such as Bartsch, Claussin, Vosmaer, Charles Blanc, etc. The literature of engraving is now rapidly increasing in consequence of the new processes of reproduction, and the great engravers of past times are becoming much better known. Works on the subject frequently appear, not only in England and France, but also in Germany, whilst Holland and Italy bring their contributions to general iconography. In consequence of this rapid extension of studies on the subject, any attempt at a universal bibliography of works about engraving would soon become obsolete or incomplete.

APPENDIX

The Law of Progress in Drawing

Since revising the text of these papers I have happened to find in "Igdrasil" for March 1892, a report of one of Mr. Ruskin's Oxford lectures where he speaks of a picture by John Bellini, a Madonna at Venice, "in which," Mr. Ruskin observes, "we are struck with the wonderful reality of a scroll which St. Jerome, who is introduced in the picture, holds in his hand. If we examine it closely we see that this reality arises from the fact that two whole chapters are written out bodily."

This is a most instructive instance of the difference between primitive and advanced art. The kind of reality attained by Bellini in this picture is much desired and laboured for by artists in the earlier stages of progress and has caused an incalculable expenditure of toil. In a later stage it is perceived that this minuteness whilst giving, at great cost, a certain kind of reality, does not give the higher truth of the visual impression, and so the pursuit of it becomes less earnest and is finally abandoned. If, in a picture, any one is represented as holding written or printed matter in his hand and the letters are made out carefully you may always be certain that the art of the painter, however manually skilful, is mentally immature. In Rembrandt's "Doctor Faustus" there is some lettering within the visionary circles on the window, but the letters are

few and irregular; no one could imagine a mature draftsman like Rembrandt copying out, with the clearness of print, two whole chapters of his Bible. In all mature modern drawing, such details as lettering on sign-boards, etc., are either treated with a wise and intentional slightness (a mere indication being enough) or else avoided altogether. For example, in the "Etchings of Old London" by Mr. Ernest George it happens that there are sign-boards in one etching, theatrical posters in the foreground of another, and tombstones with inscriptions in the immediate foreground of a third. In all these cases the artist has been careful to work on principles exactly the opposite of those followed by Bellini. He has given only the larger letters, and amongst these he has made intentional omissions, whilst he has avoided the error of imitating the rigid characters too accurately. In a word, he has bestowed no more attention on these details than is due to their visual importance in the drawing, and that is not great, though it was necessary just to indicate their presence.

I have long observed in Mr. Ruskin's teaching a much stronger sympathy with the immature conditions of graphic art than with its complete maturity. One mark of this is his insistence on outline which, in the mature states of the art of drawing, gives place to modelling and mass and to a variety of indications of character within the spaces that would have been enclosed by definite outlines in an earlier stage of art. In connection with this is Mr. Ruskin's love for a distinct separation of colours, as in maps, where the states are coloured differently. Lastly, and this is a question of supreme importance, we have Mr. Ruskin's association of virtue and conscientiousness in the artist with the elaboration of minute details, whilst the true advance is not towards a real carelessness but towards something that is often misrepresented as carelessness. The true advance of graphic art is towards a summary and comprehensive expression in which detail is made use of only just so far as is necessary for character or for the degree of explicitness required by the subject as a whole. The mature artist is not blind to the infinite detail of nature, but his art is not an imitation of it, just as in literature the minute

descriptions indulged in by some writers for the purpose of making "copy" are anything but a sign of mastery.

Inaccuracy in the Drawing of Landscape

The best way to understand the inaccuracy in landscape-drawing which is the inevitable result of the necessity for composition, is to take some of the engravings from Turner to the places which they profess to represent. It would be interesting if some accurate draftsman followed Turner on the Seine and the Loire, making careful drawings from nature of the sites selected by him, and comparing them with his free and imaginative interpretation. This would be interesting, but not all that the traveller should undertake. He ought to hunt up all the materials of which Turner composed his picture, and this is difficult for two reasons, first, because they are often far apart, and secondly, because Turner often altered the materials themselves till they were past recognition. I visited lately the scenes of two illustrations by Turner, the St. Cloud in the illustrations to Scott and the St. Germain in the Rivers of France. His St. Cloud professes to be taken from the left shore of the Seine, on which the château itself is situated, but in reality the view was taken from the right shore as from that alone the artificial cascade and the palace are together visible. Neither of the two shores near the river offers the slightest artistic interest; that which Turner gives is his own invention and it made no difference whether he placed his invention on one side or the other. His reason for preferring the left was that the invented shore gave unity to his composition by affording a support to the wooded steep on which the château stands. Placing myself where Turner must have stood to see the cascade, I found that there was only a glimpse of the palace, the upper story and pediment being visible, but that the keepers' lodges to the right were visible enough, looking (from that place) more important than the palace itself. Turner made this building appear to be a part of the palace by treating it so loosely and mysteriously that the spectator

must of necessity confuse the two. By this artifice he saved the importance of his palace. To increase the romance of the situation, the height of the artificial cascade was much exaggerated and the palace was placed much higher on the wooded steep. The importance of the real palace is, and always was, reduced to a minimum by the neighbourhood of the town of St. Cloud which is overwhelming, the palace seeming (in the reality) no more than the suburban residence of some wealthy tradesman. Turner sacrificed the town in two ways, first, by denying the existence of the advancing shore on which it is built, and secondly, by hiding the little that he left room for behind a massive clump of trees. He gives a little of the bridge, but pays such slight attention to it that he does not represent anything characteristic of the real structure. His bridge is merely a wall with arched holes to let the water through.

The drawing contains, however, a more remarkable piece of infidelity than all these. It gives a view of the Mont Valérien in the distance. Only the crest of this is visible from the river bank anywhere between St. Cloud and Sèvres, but the hill itself becomes visible, as Turner drew it, at a point on the Boulogne shore near the present Rue de Beuzenval (right bank) 1150 yards from the place where Turner sketched St. Cloud. His sketch of Mont Valérien is tolerably faithful.

All these alterations are explicable at once by the artistic desire to give importance and beauty to the palace. To attain this end Turner contrived to increase the nobility of its situation and removed every object that might set up a dangerous rivalry. He had no objection to the buildings on the crest of Mont Valérien, because they were lessened by distance.

The illustration of St. Germain, in the Rivers of France, contains several objects that it is not difficult to recognise. We see at once that Turner was on the great terrace, and his writing companion, Mr. Leitch Ritchie, expressly says: "The view from the terrace of St. Germain is one of the finest in France. In the annexed engraving the spectator is supposed to stand upon the terrace, a small portion of which is seen, but only a very

small portion; this superb promenade being 7200 feet long and 90 broad." Then follows a description of the view visible from the terrace so that there can be no doubt about the matter. It is easy, when visiting the terrace itself, to fix the exact position from which Turner saw the view and made most, though not all, of the memoranda from which the engraved drawing was afterwards composed. There is a projection in the terrace called the Rosarium, with seats to enable visitors to enjoy the prospect, and it is here that Turner studied the subject of the engraving. The parts of Turner's composition will have to be considered separately, because there is no point of view, either on the terrace or elsewhere, from which they can be seen together as in his drawing. The reader will observe a building to the right with two towers and several buttresses. The nearest tower has a dome, the more distant one a flatter roof that seems supported on short pilasters with open spaces between them. Both towers appear to be octagonal. They help us to identify the building which is not the castle of St. Germain, though it looks like a castle, but a remnant of what is called the *Pavillon Henri IV.* which, in the reality, is a picturesque jumble of buildings now used as an hotel. Of the two towers (if they can be called so) at the angles, one has a dome as in Turner's drawing, and the other a mansard roof, but neither one nor the other is octagonal, they are both square. As for the buttresses, they appear to have been simply an invention of Turner's, to help his composition by continuing and carrying up the slope of the steep ground which a vertical wall must have failed to do; in fact the buttresses are a great beauty in the composition, almost a necessity. Another very interesting feature is a terrace below the castellated building with a steep ascent at each end. That terrace really exists, but though not far from the *Pavillon Henri IV.* it is not visible from the Rosarium. The reader will observe, lower down to the left, an enclosure with a tower. Perhaps this may be intended for the cemetery, which is visible from the Rosarium, and close to it is a Gothic tower either modern or much restored. In Turner's drawing the bridge is fetched

from some distance into the composition, in reality it is more to the left, lower down the Seine. The river itself cannot be made to come into any topographic view of the *Pavillon Henri IV.*, it is much too far to the left. The aqueduct of Marly on the top of the hill does just come into a long drawing and that is all.

Turner's treatment of the river itself is very peculiar. He greatly reduces the size of all objects, such as trees and houses, on its banks in order to convey the idea of a much wider expanse of water. In the reality there are rich masses of well-grown trees which, by their importance, make the river look even narrower than it really is, and the Seine near Paris, though beautiful, is hardly yet a great river. In Turner's drawing it is, however, made to appear as broad as the finest reaches of the Saône. I only wish it were so, for the sake of the boating. Turner carries us into the distance as far as Bougival, and so conveys the idea of the panoramic scene visible from the Rosarium, whilst still preserving the form of a picture, and rather a square form too; indeed I have wondered that he did not prefer a longer shape for his river subjects.

Turner compressed his materials from both right and left, making one picture out of two distinct subjects, and even bringing material up, as it were, from behind. His principle seems to have been always to crowd as much material as he could compress together into one view which is exactly opposed to the principle of the modern French impressionists who take as little as possible of nature at one time, and fix the spectator's attention on one or two objects, and on the contrast or harmony between two hues as a scheme of colour.

It might perhaps be possible to retain the character of objects in landscape whilst modifying their forms. In Turner's work the expression of character is most variable. His interpretation of French rivers is, in a general way, characteristic, though his perpetual search for beauty led him to miss a great deal of river character that is peculiar and impressive rather than beautiful. Observe, for instance, how anxious Turner was to make the shore of St. Cloud (I mean what is close to the water) beautiful when

in nature it is not so. I may be answered that it has been spoilt, perhaps, by the new railway. No, the railway is so low down that one is hardly aware of it until a train passes, and before writing these pages I was careful to ascertain the state of the shore before Turner's time by a reference to a careful engraving done by a man without any disturbing imagination. Turner's shore is imaginary, and it is not characteristic. His interpretation of the cascade has also taken away much of its character which depends on width as much as on height. His *château* is not characteristic being made to appear as vast as Versailles and as uninteresting, whilst the real St. Cloud was comparatively small and pretty. The trees on the slope are, in nature, remarkable for their division in massive clumps. On the Turnerian slope they are comparatively insignificant in themselves and impressive rather by multitude than by mass. The same may be said for the trees in the distance of the St. Germain drawing in comparison with the fine masses by the river-side in nature, and Turner's buttressed castle to the right, though an exceedingly picturesque invention, misses almost everything that is essentially characteristic of the edifice that suggested it, an edifice also very picturesque, but in quite a different way.

My own present condition of mind with regard to Turner's drawings is simply enjoyment of the drawings themselves, as a purely æsthetic pleasure, accompanied by complete uncertainty as to the degree of their veracity, unless (as in these two cases of St. Cloud and St. Germain) I happen to know the places. When I do know the places, of course I cannot help seeing Turner's innumerable modifications, and then there comes an effort (not always successful) to forget all the facts and get back once more to purely æsthetic enjoyment which is, in reality, all that Turner has to give.

Corot is now quite as celebrated as Turner, and he was equally indifferent to accuracy in drawing, but he seldom (except in very early works) even pretended to any degree of fidelity in matters of detail. Turner does give abundance of detail, most of it altered almost beyond recognition; Corot simply omits, or takes

here and there what is topographically insignificant, and almost destitute of any specially local character. Yet these two men, with Claude who also drew inaccurately, are the most famous landscape-painters that the world has ever seen, and the very few men who have attempted to introduce accurate drawing into landscape have either remained in complete obscurity or attained only a very modest and secondary success. It would be useless to mention their names, as so few readers would recognise them.

If the reader has not much previous acquaintance with this subject he is likely to infer that inaccurate drawing must be *bad* drawing, but I should be sorry to imply that inaccurate drawing was always bad, though it is so very often. Claude drew inaccurately, yet in his best works with a tender grace that gained him much sincere and well-merited admiration. The qualities of Turner's drawing, considered as a representation not of particular scenes, but of landscape beauty, reveal an exquisite refinement in his sense of form. In this respect Turner's landscape-drawing was incomparably superior to that common amongst landscape-painters, especially of the French school, in the present day. Corot seemed hardly to draw at all, yet he drew well enough to express with the utmost delicacy the ideal of landscape elegance that haunted him. These men were not draftsmen of objects like a good painter of the figure, or of still life, but they were draftsmen of grace and beauty for which nature supplied only a suggestion.

Elementary Exercises with the Burin, Engraved by Leopold Flameng

Although few readers of the present volume are likely to study engraving practically, these elementary exercises may be of use to the reader who has no intention of copying them by enabling him to analyse the technical execution of line-engravings more completely. The practical student may imitate them with a burin on a copper-plate in the order indicated by the numbers.

Each exercise should be copied repeatedly until the student finds himself able to produce something approaching to a facsimile. He is already supposed to have attained a high degree of proficiency in drawing. The following explanations, given by M. Flameng himself, refer to the numbers upon the plate :—

1. *Flat shading in parallel horizontal lines.*—The lines to be engraved side by side with the burin in such a manner as to obtain an equality of gray shading.

2. *Flat shading in curved lines.*—This exercise is also for equality of tone, but with the additional manual difficulty of the curve.

3. *Flat shading in waved lines.*—Also for equality of tone, but more difficult than the preceding owing to the contrary nature of the curves.

These three exercises are without drawing, except so much as is necessary to keep the lines parallel.

4. This figure was engraved directly from nature, and contains a certain amount of elementary drawing. M. Flameng took a piece of white linen about the size of a pocket handkerchief, and across it he ruled with a pencil a series of parallel lines. The linen was then arranged in folds and pinned to a board. M. Flameng then made a direct study of it with the burin. Had the linen been of a gray colour the artist might have shaded it like the small portion to the right, but in that case the lines of shade would all have followed the same directions as those of the engraved pencil lines.

5. This is an example of the kind of shading used for imitating the texture of velvet. The first lines are heavily engraved, and may be easily distinguished. These are interlined with finer lines and then crossed with a second shading. In shading draperies the first lines follow the folds, and so are explanatory of form, but the second are added for local colour and texture. The two together produce lozenges, and it is important that these should be regular and not too much elongated, as elongated lozenges produce a *moiré* effect which is most unpleasant to the eye.

6. This kind of engraving for drapery is often used for satin.

The engraver begins with strong lines following the curves of the material, and then he engraves lighter lines between them.

7. For cloth.—This is engraved with first and second sets of lines, the second crossing the first so as to produce lozenges. A third series may be added, crossing the two others. This has been done to some extent at the lower end of the engraved example.

8. Specimen of a kind of shading used for hard bodies. This is in strong lines with a second series of lines at right angles to the first.

9. Shading for flesh.—A series of little touches with the burin, each of which requires to be done twice, as a short stroke of the burin, if it were not retouched, would leave something like the shape of an arrow-head. A second stroke is therefore wanted in the opposite direction to complete the minute bit of line.

10. In this example the bits of line are completed by the addition of the second stroke.

11 and 12. These are illustrations of the ways in which short strokes may be well and ill placed. In No. 11 they are well placed, that is, they are not immediately above each other but cross like bricks in a wall. The reason why there is an objection to placing them immediately over those below is because they would then leave white intervals forming lines at right angles to themselves, which become tiresome and importunate to the eye. (Care is taken by compositors to avoid similar white lines caused by continuous spaces in typography.)

When the first exercises have been mastered, young students are recommended to copy good examples of engraving and to select them as much as possible with simple lines of shade. Mellan's engravings are often taken as models in France, because they are distinguished from much modern work by the simplicity that he preserved in the lines that he employed for shading.

The two great enemies to simplicity in shading are the desire to exhibit curious feats of skill and to imitate many different textures. In pure classical engraving texture can hardly be said to exist,—I mean in the imitation of natural objects,—though the

engraving had a sort of texture or quality of its own produced by the clearness of the engraved lines, distinctly visible, however numerous.

Pyrogravure

This is a means of engraving on wood, leather, and other substances for decorative purposes, not for printing. The instrument used is a point heated to redness. The art is a very old one and has been practised in many countries, but it has become much more convenient of late through the invention of an improved heating apparatus. The point was formerly a piece of iron heated in the fire, awkward to hold, and always rapidly cooling; at present it is as convenient as an ordinary crayon-holder, and the heat can be maintained or regulated to different degrees at the will of the operator. The point is of platinum first heated in a spirit-lamp, and the incandescence is maintained by a steady current of atmospheric air, carburetted by passing over a mineral essence in a phial. The current is supplied either from a balloon or from a reservoir like a gasometer, or else from an indiarubber pear pressed with the left hand, and it reaches the point through a little tube in the holder. These improvements, or the application of them to fire-engraving, are due to M. Manuel-Perier, of Paris. (1 Rue Pleyel.)

Let us suppose that the subject to be engraved is the decoration of a panel in poplar-wood. The drawing is first made out carefully with a lead pencil and the engraver burns in every line with the incandescent platinum point, giving various degrees of depth according to the effect required. The appearance or quality reminds one very closely of the bitten etched line. If a tone is required over the lines, or between them, it can be easily given by holding a broader platinum instrument, heated in the same manner, over the wood without touching it. This gives a brown tone of any required depth.

Landscapes, portraits, etc., can be engraved in this way as easily as decorative ornament, provided that the work is on rather a large scale. If the subject is a landscape on a poplar

panel it will present almost the appearance of a large etching and can easily be reduced and reproduced as a *héliogravure*. Fire-engravings on leather (calf) have a different quality. If reproduced so as to print typographically, they have the appearance of woodcuts and sometimes of pen-drawings according to the mode of treatment. But the great use of this art will be for decoration. It can be used on various kinds of wood, on bone, ivory, velvet, leather, etc., and being essentially an artist's art it permits the utmost variety of personal expression. Decorative pyrogravure is a rational pursuit for moderately accomplished amateurs, as although the highest artistic talent or genius (the genius of a Rembrandt, for instance) might find expression by its means, one may fire-engrave ornaments of all degrees of simplicity or complexity, and they can be copied from existing designs.

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