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SUGGESTIONS

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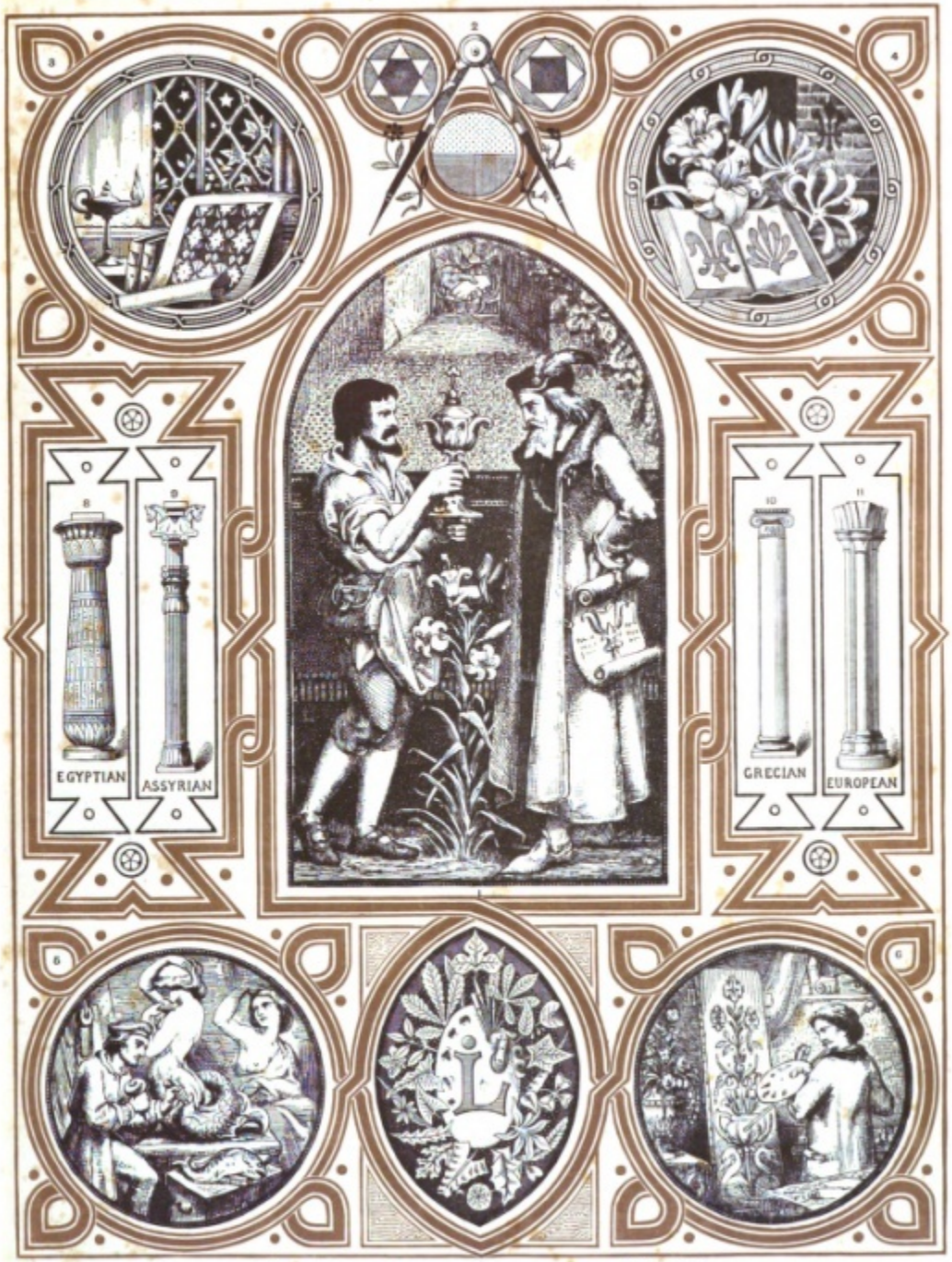

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SUGGESTIONS IN DESIGN

BEING A

COMPREHENSIVE SERIES OF ORIGINAL SKETCHES IN VARIOUS STYLES OF ORNAMENT.

ARRANGED FOR APPLICATION IN THE DECORATIVE AND CONSTRUCTIVE ARTS.

BY

JOHN LEIGHTON, F.S.A.,

AUTHOR OF "THE LIFE OF MAN SYMBOLIZED,"
"MADRÉ NATURA," ETC.

WITH DESCRIPTIVE AND HISTORICAL LETTERPRESS,

By JAMES K. COLLING, F.R.I.B.A.,

AUTHOR OF "GOTHIC ORNAMENTS," &c.

LONDON: BLACKIE AND SON, 49 & 50 OLD BAILEY;
GLASGOW AND EDINBURGH.

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PUBLISHERS' PREFACE.

A DESIRE to ornament or to enrich by decoration the ordinary works turned out by the hand of man has been common to every age, and even among savage tribes this love of ornamentation is as apparent as it is among our most modern and art-loving craftsmen. It is, however, a melancholy fact that many gifted workers in the numerous branches of trade and manufacture are frequently led astray, or are at best often repeating common and hackneyed forms, in their efforts to enrich their works, for the want of a mere "suggestion"—not an elaborately worked-out idea, but an original thought, or as the French more happily put it a *motif*—which would suggest, by some slight turn or alteration, a form or kind of enrichment adapted to their purpose.

A work supplying such suggestions has long been sought after, and would doubtless prove a boon in the hands of art-workers. The present series of "Suggestions" was therefore projected, in which many distinct species of ornamentation have been carefully brought together and arranged for practical use. The designs are the production of Mr. John Leighton, a gentleman well known in the art world, who has been awarded medals for his ornamental and decorative designs in all the great International Exhibitions at which he has competed, and who served on the jury at the Paris Exhibition of 1878. They have not been taken from other examples or collected from already published works by other authors; they are throughout *original*, conceived in the spirit and with the proper art feeling of the various styles to which they severally belong, and are the accumulated result of long and arduous studies. They are intended as aids to design rather than for servile imitation or direct appropriation, serving to represent the type of many designs and not the exact portraits of any. The object of the author, therefore, being to present *suggestions*, leaving the designer or art-workman to modify or adapt them to his own purposes, it is hoped that the book will be found eminently suited to the wants of all engaged in decorative and ornamental work.

For the convenience of reference, the various styles are placed, as far as possible, in their true historical order, and the descriptions aid this arrangement by giving brief but clear accounts of the various developments and different phases of ornamental art. The illustrations embodied in the text are mostly taken from actual examples,

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and serve to convey a good idea of the characteristic features of the various styles of architecture and ornamentation which have been developed in the different countries of the world.

It may be proper to state that the nucleus of the present work, bearing the same title, was published by Mr. Leighton under the *nom de plume* of "Luke Limner," in 1852–53, but it then contained less than half the number of examples (47 Plates). This original work was the first of its kind in which all the styles of ornament were displayed. It was begun when Gothic art, under the influence of Pugin, was paramount—when Owen Jones had only published his *Alhambra*, and his *Grammar of Ornament* had not even been thought of. Indian art was then only beginning to be appreciated, and the art-value of Japanese work was still unknown.

This smaller work was highly valued at the period, and the marked success it met with has induced the author to revise and redraw the original plates, as well as to add to their number to such an extent, that the book may justly be considered a new one. In the smaller work there was no letterpress beyond a slight description of the Plates. The publishers of the present work, feeling this want, and resolved to spare neither expense nor trouble to make the work thoroughly useful, sought the aid of Mr. J. K. Colling, a well-known writer on ornamental art. It is hoped, therefore, that the extensive addition of descriptive and historical matter by this gentleman, with the numerous engravings introduced throughout the text, will render the book a valuable help to the artist and art-workman.

December, 1880.

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67.	PATTERNS FOR MARQUETRY AND ENGRAVING,	5	"
68.	WALL DIAPERS, PANELS, PATTERNS FOR LACE WORK, &C.,	10	"

RENAISSANCE (ELIZABETHAN AND JACOBEAN).

69.	STRAP AND CARTOUCHE ENRICHMENTS,	6	"
70.	HERALDIC MONUMENT AND OTHER DEVICES,	9	"

RENAISSANCE (LOUIS XIV. AND XV.).

71.	ARMS, SPANDRELS FOR METAL WORK, SCROLL AND STALACTITE ORNAMENT, &C.,	9	"
72.	ROCOCO SCROLL WORK, &C.,	7	"
73.	PANEL, ARMS AND ROCOCO SHELL AND SCROLL WORK,	8	"

FLORAL SPRIGS.

74.	ROSE, POPPY, TEAZLE, &C.,	9	"
75.	FUCHSIA, THISTLE, LILY, BINDWEED, &C.,	9	"
76.	HYACINTH, CATCH-FLY, PINK, POMEGRANATE AND POPPY, LEAVES AND BERRIES, &C.,	14	"
77.	MAPLE, HEMLOCK, MAIZE, BUDS AND LEAFAGE,	9	"
78.	CONVENTIONAL AND OTHER FLOWERS AND LEAFAGE, FOLIATED SCROLLS,	13	"
79.	OAK, VINE SCROLL WORK, FOLIATED CROSS, FRUIT SPRIG, &C.,	12	"
80.	GRASS FORM, PEA, OAK, &C.,	13	"
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89.	DOUBLE FEMALE HEAD, HALBERDIER, PLANT FORM WITH FEMALE HEADS, ANIMAL CONTRAST, PILGRIMS OF LOVE, &C.,	9	"
90.	SATYR, MEDALLIONS, VENUS, CERES, &C.,	10	"
91.	SPORT, SNOWDROP AND ROSEBUD, THE OCEAN, LOVE AND CUPID, MUSE AND LYRE, &C.,	8	"
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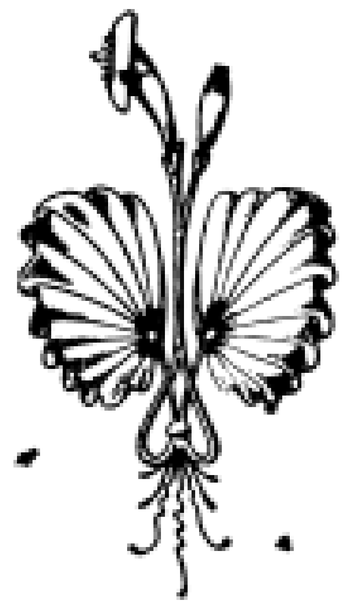

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SUGGESTIONS IN DESIGN.

CHAPTER I.

INTRODUCTION.

IN the most primitive states of society, among the earliest efforts of the human hand was that of forming representations of the natural objects by which man found himself surrounded. This was done either by tracing the form of the object in outline, which we call drawing, or making an imitation of the actual body of the thing, which we denominate sculpture. Of the two, drawing is the earliest, for the object must in some shape be drawn before it can be sculptured. They are, in fact, intimately connected, for the power of drawing not only exists in the use of the pencil, but it may be expressed by the knife, the axe, the chisel, and the gouge. We may, therefore, speak of the excellence of the drawing in a piece of sculpture, equally with that which we see in outline upon paper or canvas. There is the same wonderful force and power of drawing in the sculpture of Michael Angelo that there is in his frescoes.

Drawing is the origin of all writing—indeed what is writing but simply drawing in a certain set and conventionalized form? Writing is the power of drawing rapidly specially arranged forms called "letters," and combining them to convey to the eye a definite meaning. Originally, as in the Egyptian, a rude representation of the object stood for the word itself, and from this mode of expressing thought the art has gradually grown up, in the process of time, of making a combination of twenty-six arbitrary characters express all our ideas.

It has been discovered of late years that drawing was practised with considerable ability even in prehistoric times. "We may think it," says Mr. William Maskell,[1] "to be sufficiently strange, in tracing the early history of the art of carving or engraving in ivory, that we should be able easily to carry it, upon the evidence of extant examples, to an antiquity long before the Christian era; through the Roman, Greek, Assyrian, and Jewish people, up to an age anterior to the origin of those nations by centuries, the number of which it may be difficult accurately to count. These very ancient examples are of the earliest Egyptian dynasties; yet, between them and the date of the earliest now known specimens of works of art incised or carved in ivory, there is a lapse of time so great that it

[1] "Ivories, Ancient and Mediæval." *South Kensington Museum Handbook.*

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may probably be numbered by thousands of years." In caves at Le Moustier and at La Madelaine in the Dordogne, many fragments have been found, of late years, of tusks of the mammoth and of reindeer's bone and horn, upon which have been discovered incised drawings of various animals, which no one can examine without acknowledging their merit. The animals are carefully and vigorously drawn. The heaviness and sluggishness of the mammoth is as easily recognized as the grace and activity of the reindeer.[1] In short, these extraordinary prehistoric drawings are from the hands of men who were neither beginners nor blunderers in their art. They are the work of skilled artists, and the modern draughtsman would scarcely exceed their firmness and decision as well as their evident rapidity of execution.

But to what does all this tend, this mere proof of the extreme antiquity of drawing? Why, to the fact that the power of the hand to represent form seems to have come to man by instinct, and that such a wonderful power would not have been given but for the very highest purposes. But if such precision and accuracy of drawing were attained in prehistoric times, that they equal modern works, where is our advance? Does it not suggest to our minds that drawing is an art which has been neglected among us? Has not our power of expressing our ideas by the means of, what I have called, conventional drawing, the art of writing, led to our neglecting that of true drawing? No doubt but that it has. Drawing has become the art of only a few among us; it has, therefore, not attained that high power and given us that facility of command over expression in the fine arts, that it assuredly would have done, had it been the practice of the many. Our hands have become cramped by civilization, as our feet have become ill-formed by our modern boots and shoes. How many men, for instance, are there, even among practised carvers and modellers, who can draw with facility and readiness? Numbers of them have to depend upon some one else to draw and design their work for them, before they can attempt its execution. But is this as it should be? We never shall have high-class art workmanship in this country until the artisan, the executant, is also the designer of his own work, and this he can never be unless he practises the power of drawing.

Nothing is more common than to see children take naturally to drawing. Yet when they go to school this instinct is neglected, and as they grow up it is totally discouraged, so that at length they lose all power of expressing even the most simple forms on paper. Doubtless there are many examples to the contrary, but as a general rule this is invariably the case. Instead of which no education should be considered complete without a knowledge of drawing.

This, however, is speaking of mere ordinary education. How much more must this power of delineating form be imperative to the student in art-workmanship; or to one who may be desirous of taking advantage of these "suggestions in design?" Without this necessary skill with the pencil he cannot make use of them in the way that the author has intended that they should be used. That is, that they should not be taken as mere copies for imitation to avoid the necessity of designing, but that they should be looked

[1] Copies of these may be found in Sir John Lubbock's work on *The Origin of Civilization.*

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upon and studied as hints, or *motifs*, as the French happily express it, for designs of his own. None of the "suggestions" are taken literally from old examples, yet nearly all are divided into the styles of different countries or specific periods. They are rather attempted to be designed with the feeling of the various countries, with the intention of pointing out how many ordinary and well-known forms may be made original by some simple variation, and thus to endeavour to awaken in the mind of the student the power of design.

Without doubt we have, through the various art schools which have been established of late years throughout the country, a wonderful increase in the art of drawing, but many of them are apt to fall into the error of obliging their pupils to make elaborately "shaded" drawings. Now it should be distinctly remembered that "shading" is not drawing. That although it may be useful, yet the art of delineating form in simple outline with facility and precision, is ten times more important and ten times more valuable than the mere art of shading. Yet many of these pupils are obliged to spend ten hours over shading to one that he spends upon actual drawing.

However, having now pointed out the very great importance of the power of drawing, and that without it no progress can be expected or hoped for in the decorative arts, it should be properly understood of what "design" consists.

Design may be considered to be of various degrees according to its originality, which is that quality that distinguishes it from the mere repetition of previously arranged forms. On the other hand, this must not be confounded with novelty, which is a totally different quality. Design may be described as the embodiment of thought.

For instance, we may speak of design in architecture, such as that of a large and important building, and we may perceive that every portion of it is something new, and such as we had never seen before. If, however, we observe that the forms are fantastic or whimsical; that there is a want of proportion, a deficiency of light and shade, and the detail is badly drawn, we say at once that this is made new in form and appearance solely for the sake of novelty. There is no thought or conception, and the elements of true design are wanting. Again, the work may possibly be only a repetition of something which has been done before; or it may be but a collection of different parts obtained from many other works, put together in a species of patchwork of the most incongruous kind. But some trifling variations are introduced, upon the strength of which the author rests his claim for a new design, or he trusts that the sources from which he obtained his materials will not be detected, and so he will gain credit for originality. These are cases of the very lowest class of design. But if the building be one where beauty of proportion has been carefully studied, the light and shade arranged to give agreeable variety and pleasure to the eye, the detail well considered and the ornamentation distributed with due regard to architectural embellishment, although every feature may not strike us as perfectly new and original, yet that design, when it thus exhibits thought and æsthetic feeling is of the very highest class.

Unfortunately we in these times have been landed, so to speak, at a summit from which we complacently view the world of

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art below, and think that it is not necessary to strive to rise any higher. We have all the styles of the earth spread out before us, and we think that we have but to take up that one which is most to our fancy to obtain all we want. Hence we fall into copyism, and try to delude ourselves that this is the whole art of design.

It is certain that no one can design or invent any work of art, solely and entirely new, without partially *copying*, or taking ideas from either nature or art. We must have some groundwork or *motif* to work upon. We have to learn all that has been done in art before our era, and to see how nature has been adapted and conventionalized by different people in former ages. We have to sift the good from the bad, the true from the false, and again study the works of nature in search of new forms and fresh modifications. For there are no forms in the whole arena of art which have not originally been taken from nature.

With proper study design may be exercised by all who have practised the art of drawing, even down to the humblest craftsman. It may possibly be only in a small degree; let him, however, but stamp his work with thought and add thereto one touch of beauty culled from nature's stores, and he will have created a work of art. To assist this effort is the object of these "suggestions," and it will be observed that they aim at encouraging the artisan—he that has to work out the smaller and less important details—to add by his own "cunning hands" the ornamentation to a work, of whatever kind it may be. It is not only the master minds which help on the position of art in the world, but it is also the combined might and power of the workers, if only they can be guided in the right and true direction.

Before, however, a man can design ornament of whatever description, he should know something of architecture. It is the grammar or foundation of the whole, and without this knowledge he is never sure of not going astray. Architecture is founded upon a combination of geometrical forms, and these combinations are so infinite that they are practically inexhaustible. Now as all geometrical forms are obtained from nature, it follows that if we seek fresh inspiration, we are most likely to obtain it by referring to nature.

One portion of this work gives a great variety of the forms of ornamental art, accompanied by a short description of the architecture which has been practised at various epochs in different countries, from the earliest to the latest times,—Laying before the student a map, as it were, of the art of the world. But the latter part of the work, and perhaps by far the most important, is devoted to studies taken entirely from nature, without reference to any style whatever. For nature is of no style, and therefore is equally applicable to any phase of art.

Persons may assert that they cannot perceive any connection between nature and art, and it has been said that we do not find straight lines in nature. It may be quite true that we do not find mathematically straight lines, but we find them straight enough for all practical purposes. What can be straighter than the line formed by the horizon of the ocean, or the perpendicular stem of the fir-tree? Lines are to be found angular also, as in the branching of ferns, as well as forming every variety of curves and spirals.

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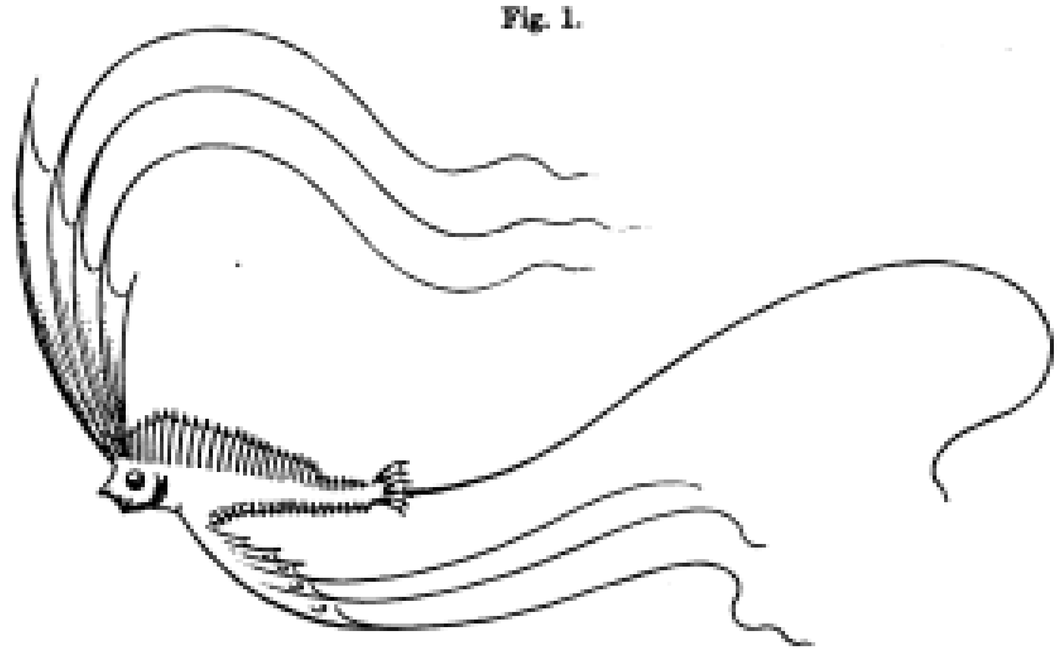
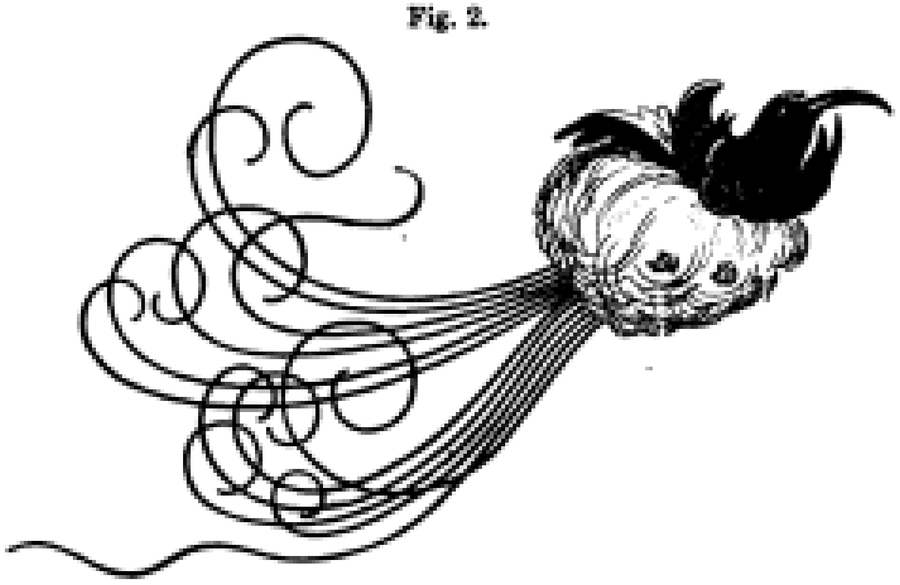
They are of constant occurrence, we have but to search for them. In the accompanying figure, we find some elegant curved lines

Fig. 1.



in a fish (Fig. 1), which is from the Mediterranean, more especially in the vigorous curves of the crest-fin with the lines sweeping from it. Spiral lines are seen in the tail of the twelve-thread plume bird (*Epimachus albus*) of New Guinea, Fig. 2. These are only two

Fig. 2.



examples selected at random from thousands of other instances.

All geometrical forms are found in nature, such as the circle, the triangle, the square, the pentagon, and others. But nature is often so irregular that the geometrical basis cannot always be readily traced. It requires study and careful research to discover that amidst all the irregularity there is regularity —that all has been planned and is conformable to rule. The ordinary geometrical figures are seen most distinctly in cross sections; as the circle, in the succession of rings in an onion when cut across; the triangle, in a section of the stem of the sedge; the square, in the stem of the dead-nettle; the pentagon, in the stem of the common bramble; and so on. These forms will often appear again in the leaves and flowers of a plant. Thus the square or cross-form is followed in the mode of the branching of the leaves of the dead-nettle, and the leaves and flowers of the bramble are arranged upon the pentagon. But nowhere is the geometry of nature seen more clearly than in crystallization. All the solid figures of geometry are found among the metals and minerals. But one of the most charming instances of this nature is the minute crystals of snow. They are composed mostly of stars of six points, in a great variety of beautiful forms. They are found falling in minute tufts or flakes consisting of two or three of the crystals frozen together, in certain conditions of the atmosphere, when they do not become decomposed by the warmth or moisture of the lower strata, and in calm weather can be plainly seen by the naked eye.

The collection of examples of these given in Figs. 3 to 8 shows the great variety which exists in these curious little star forms, and which are represented about twice the natural size. They consist of a combination of the triangle and hexagon, radiating in lines from the centre, or are compounded of minute triangles and hexagons arranged symmetrically. Their delicate

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lines always preserve the hexagonal angles of 30° or 60°, and sometimes they assume leaf-like forms which seem to suggest, without much alteration, beautiful designs for hexagonal tiles. Imperfect crystallization of the same kind may be seen also on the window-pane of a frosty morning, the leafy combinations of which are most suggestive

Fig. 3.

Fig. 4.

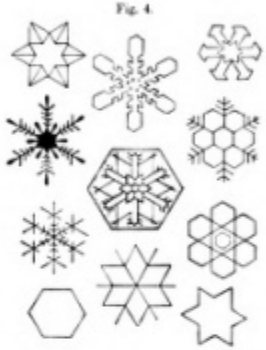

Fig. 5.

Fig. 6.

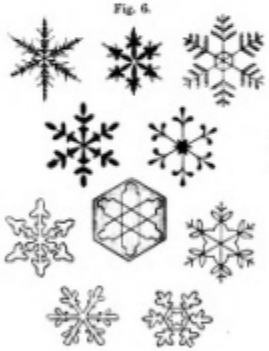

Fig. 7.

Fig. 8.

and elegant. The angles formed by the branching are here the same as in the stars, the reason being that 60° is the angle at which water crystallizes in freezing.

There is, however, the other principle which is found in nature, and which may be often legitimately taken advantage of in art —that of irregularity. We know that the Japanese, especially, have made constant use of this, and now that Japanese works have been so largely imported into this country of late years, many of our own artists have affected to adopt the same principle. Thus we now come across instances where it is carried out in the most ludicrous and eccentric manner possible. Such as circular

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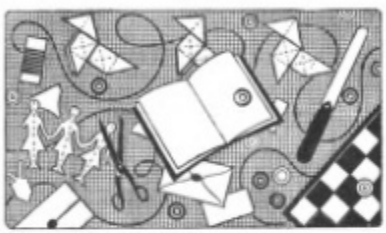
designs on porcelain plates, the natural position of which would appear to be the centre of the plate, put on one side so that the edge cuts off a part of the design, while

Fig. 9.



other parts of circles are made to overlap the first.

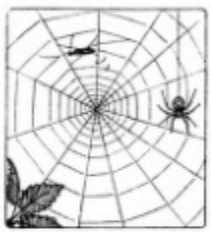
This is, at least, a most dangerous course, because if worked out and applied through everything, we should arrive at a state where no design or previous arrangement would be

Fig. 10.

required—no thought necessary; we should have but to use things at random and all would be attained. This may be all very well up to a certain point, and upon a limited scale, but it may be easily carried too far, so as to destroy the whole art of design.

The children's play-table, Fig. 9, exhibits a certain amount of quaintness in representing accurately the confusion in which it was left, but there is no design. Everything is thrown about at random, and there are objects in nature which are also totally irregular,

Fig. 11.



such as the forked flames of fire and the arrangement of the stars at night, Fig. 10. But when we come to the spider's web, Fig. 11, we find that nature has taught the insect a certain amount of symmetry, and he radiates his lines from a centre, and keeps all his rings carefully parallel to each other, but the position of the insects and the foliage to which the web is attached give

Fig. 12.

variety and destroy too great a tendency to regularity.

Enrichment of surface is obtained by the breaking it up by ornament, which may be arranged either symmetrically or unsymmetrically, or by a blending of both. The Japanese, as has been said, adopt the irregular and unsymmetrical. Of this character are the flowers in rain, Fig. 12; tadpoles

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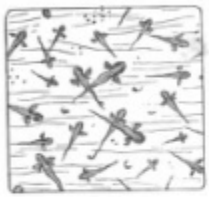
in a pool, Fig. 13; sand on the sea-shore, Fig. 14, with the footprints of man and birds, sea-weed and shells, which we may call

Fig. 13.



primitive, in distinction to Fig. 15, the artificial. This exhibits the forms indicative of

Fig. 14.

modern civilization, such as the boot marks, horses shoes, the twisted rope, writing on

Fig. 15.

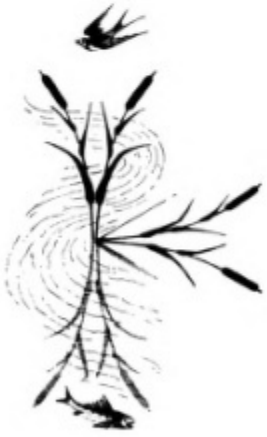
the sands, and broken pipe. All this may be described as ornamentation of surface when used as decoration, but of a very low type.

When we, however, find horizontal, perpendicular, and spiral lines in nature, and we

Fig. 16.

proceed to arrange these symmetrically, we endeavour to produce a higher class of

Fig. 17.



design, as in the slightly conventionalized forms of the grass and ivy on a brick wall,

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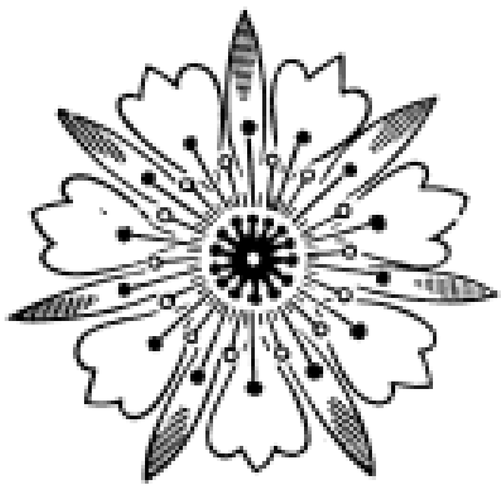
Fig. 16; or if we take advantage of the suggestion obtained by the reflection in water of a reed on a river's bank, Fig. 17; but by the fish and the swallow we obtain variety.

The beauty of symmetry is taught us again in all animal and insect form, where the two halves are always alike. Radiation we have seen in the snow crystals, but it is found also in a vast number of flowers, as in the conventional form, Fig. 18. The kaleidoscope teaches us the value of radiation combined with symmetrical arrangement of colour.

Fig. 18.



Repetition alone is pleasing to the eye, and has been used as a source of the ornamental from time immemorial. Repetition of simple straight lines, as in Fig. 19, is of constant occurrence in the formation of enrichments for mouldings or bands; while curved forms, as in Fig. 20, are still more ornamental, and are to be met with in various styles of architecture.

Fig. 19.

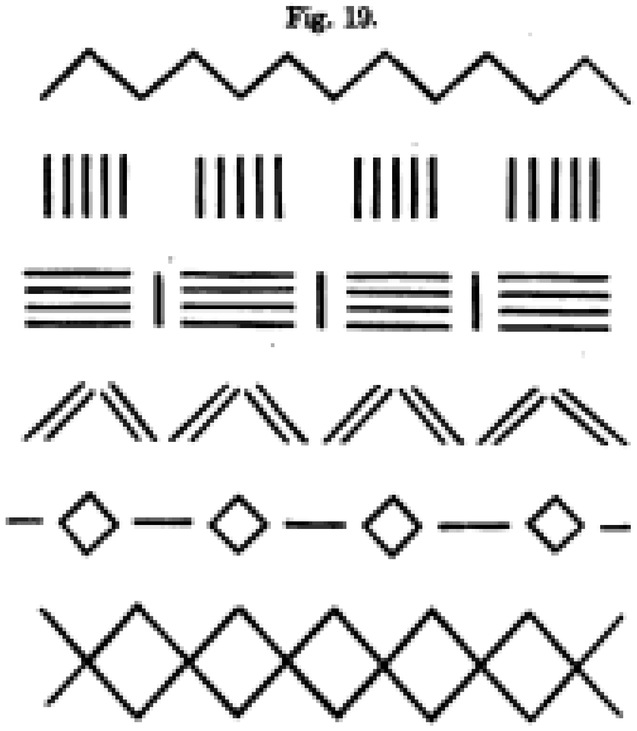
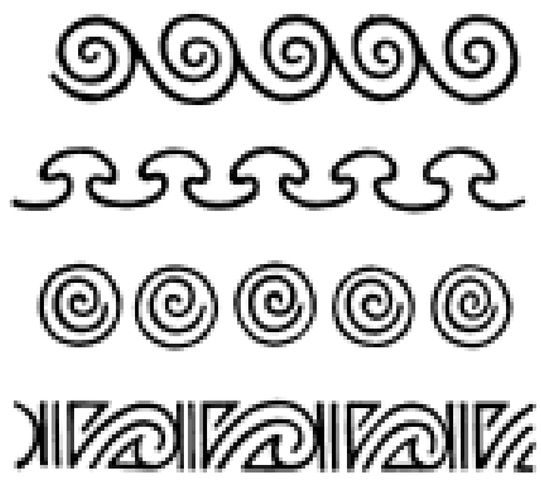
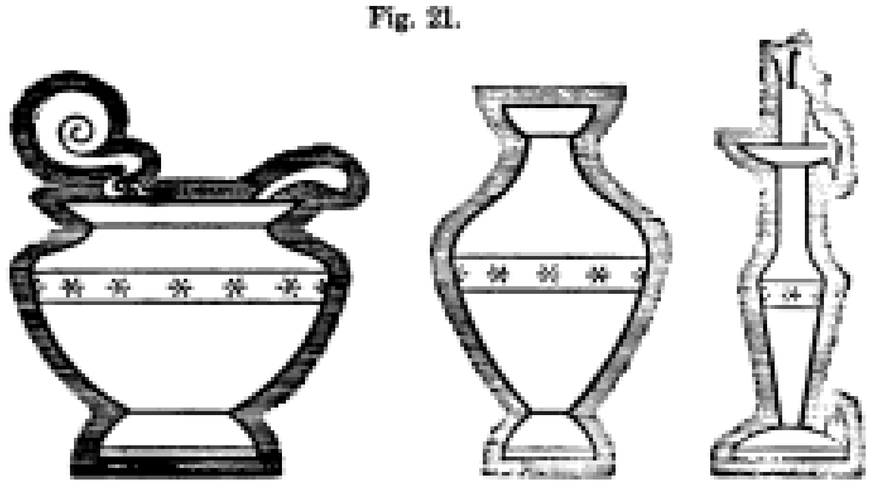


Fig. 20.



Forms may occasionally be varied by expansion or contraction, as in the case of the Greek vase, which may on the one hand be expanded to the soup tureen, or contracted to the candlestick on the other, as indicated by Fig. 21. This may be to the loss of beauty, as we perceive it in its more perfect form in the centre; but at the same time the other forms are beautiful in their degree, because they are more appropriate to the purpose for which they are intended than the central vase would have been. Thus it is throughout art—those forms are the most

Fig. 21.



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beautiful that are the most fitted for the purposes to which they are applied.

There are certain principles of this sort which have been followed as rules in art in all ages, although when art has been degraded and become merely the subject of ruling fashion during a period of vitiated taste, such rules have been often broken through and disregarded. Still the artist has been glad to return to them again after such degraded phases have passed away.

In the following chapter some of the most important of these principles have been collected and compactly arranged for convenience of reference. For the facility of remembrance, consistent with clearness of expression, they are made as concise as possible.

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CHAPTER II.

GENERAL PRINCIPLES OF DESIGN.

THE following are some General Principles of Design, which should be adhered to in Architecture and in the Decorative Arts:—

1. Architectural members that support, or appear to give support, as columns and piers, should be regulated in size and strength according to the weight, apparent or real, they have to carry, and according to the material of which they are composed.

   In wood-work the construction may be hollow for columns, and open and framed together for piers; stone and brick should be solid, and arranged in horizontal beds or courses, while iron should be cast hollow, and made greatly less in size, or diameter, than what is required for other materials. Cast-iron should be used in compression, wrought-iron in tension.

2. Supports should be upright and not bent or crooked. If spiral, twisted, or of other decorative form, the core should be sufficient to give the relative or apparent strength.

   Curved legs of chairs and tables are, therefore, objectionable.

3. Piers should be arranged to come over piers and voids over voids.

   That is, windows and other openings should be arranged, as far as possible, to come over one another, and the walling between them be brought up solid from the foundations. In modern construction, in consequence of the great strength of iron, this rule is often broken through. Iron columns are frequently substituted for piers of masonry.

4. Stability of construction should be apparent as well as real.

   Where the walling is removed the girders, iron columns, or other constructive substitutes, should not be concealed.

5. Construction should be the origin of decoration and ornament. Ornament in relief should not be added to, or overlaid upon the construction.

   For example, wreaths and festoons are frequently placed so as to hang over arches, mouldings, and other enrichments. They thus are separate from and added upon the construction, and, therefore, never aid the beauty of a work. For the further elucidation of this important principle, which is so constantly violated in Renaissance and Rococo work, see Nos. 6, 9, and 12.

6. All ornament should be taken or worked out of the solid material, and not added upon it.

   In carving a panel the ornament should be worked out of it, and not carved separately and afterwards glued upon it. Again, in wall surface, the carved enrichments should be taken out of the wall, and not added to it.

7. Avoid shams both in construction and ornamentation.

8. Utility should be considered before decoration. All decoration is objectionable that interferes with the usefulness of the object to which it is applied.

   Many handles to domestic articles, especially in cast-iron, have been made so ornamental that the enrichments often seriously hurt the hand when they are grasped.

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9. All ornament should be subordinate to the object ornamented; and if kept duly subordinate the object cannot be over-ornamented.

Take, for example, an Indian sandal-wood box; the form of the box is not in any way altered by the vast amount of ornament worked upon it. The box can never be over-ornamented while the form remains unaltered, although it may be literally crowded with enrichment. The true position of ornamentation, in most late styles, has become degraded by being made into the thing itself, instead of serving, as it should do, merely to enrich it. Thus a lily, or convolvulus, has been made into a candlestick, the corolla forming the bowl to receive the candle, instead of the flower being used to ornament the candlestick. The first, is its false position; the last, its true one. Whenever we hear of a work being over-ornamented, it arises invariably, in some way, from ornament being thus thrust into a false position.

10. All ornament should be founded upon a geometrical lines.

This is also a natural law which may be found in nature by study and observation.

11. Natural growth should be the law in ornament, and branches or scrolls made always to flow in their growing direction. Never make foliage grow two ways.

12. Flat surfaces should have a sufficient amount of flatness in their ornamentation as not to destroy their quality of flatness.

A beautiful example of this may be seen in the carved diapered spandrils of the triforium arches in the choir of Westminster Abbey.

13. The carved, sculptured, or moulded surface of ornament, should not be wrought into such violent light and shade, as to confuse it with the more intense shadows which should relieve it from the ground on which it is placed.

Thus the modelling of the surface of a leaf, as in the Acanthus, should not be divided up into deeply wrought channels, as seen in late Roman work, but be kept comparatively flat as in the Greek.

14. Undercutting of a carved enrichment, when wrought out of the solid, should not be so great as to make it appear to have been afterwards inserted, or glued into its position.

15. Carving should never be executed in party-coloured materials, such as figured marbles, or wood with strongly marked grain.

16. Simplicity in composition is far more difficult of attainment than complication.

17. Elegance of leading lines is of more consequence than after adornment.

For this reason the scroll form of enrichment has been so universally adopted in all ages, because of its beauty as a leading line or stem.

18. That form is the most beautiful that is the most appropriate for its purpose.

19. Branch lines in ornamentation should be made to flow smoothly out of each other—but there are some exceptions to this rule, as when the angular or the opposite curve is used.

20. Natural forms, plants, animals, and the like, cannot be rendered literally for the purposes of ornament, but require to be treated in a conventional manner. The degree of imitation that is suitable depends upon many circumstances, such as the nature of the materials, or the distance that the object is to be placed from the eye of the spectator.

What is meant by conventional treatment, is that departure from nature which is absolutely necessary to the successful application of natural forms to ornamental art; and, as conventional

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treatment is always varying according to circumstances, it follows that no fixed rules can be laid down for direct guidance.

21. Work should not be thrown away by an object being made too elaborate in detail for its position. Carving should be simplified according to the height at which it is placed.

For example, a rose which might be made double when placed near the level of the eye, would be improved and be more effective if made single, when situated far above it.

22. Objects should be elongated in their proportion according to the height at which they are placed, to allow for the foreshortening which takes place when seen from the ground.

This refers, especially, to finials and pinnacles placed at a considerable height.

23. Light and shade in carving should be duly balanced, and extreme contrasts of high light and deep shadow carefully toned down by intermediate degrees of shade.

No positive rule can be laid down for this. It must depend upon the eye and judgment of the artist. It is, however, right to draw attention to its great importance.

24. A rough material such as coarse-grained sandstone, requires broader treatment and a greater contrast of light and shade than a fine-grained material, such as ivory or marble.

For this reason, and the deficiency in power of our daylight, Greek mouldings and other enrichments have very little effect when executed in the rough materials usually adopted in this country. They are too delicate and refined for our climate and our materials.

25. Decoration should not be pictorial, shaded to imitate work in relief, or represented in perspective.

26. Colours should not represent material, but be considered decorative only.

27. Positive colours should never be used in juxtaposition or upon each other, but always separated by white, black, or gold.

All colours are affected, more or less, by those with which they come in contact. Adjoining bright colours therefore affect each other in different proportions, but both suffer, and neither of them are seen true. Hence the necessity of separating them. White and black are relative terms, and all those shades are meant which approach closely to light on the one hand and darkness on the other. But a "broken" white (that is, with a slight admixture of colour) or intense and deep greys may be often substituted with good effect for the more positive colours, known as white and black.

28. The same colours in different tones, as light and dark chocolate, called "self-tints," may be used one upon another.

We perceive this principle in nature when we examine the fronts and backs of leaves, the back being generally of a lighter tone than the front. It may be observed, again, in the new and old foliage of the ivy, when the young leaves come out in spring.

29. The primary colours, red, blue, and yellow, should always be used sparingly and in small quantities, as we see in nature, where the secondaries, greens, often toned down by the tertiaries, greys and browns, always predominate.

The primary colours are		Red. Blue. Yellow.
The secondary	,,	Orange. Green. Purple.
The Tertiary	,,	Olive. Brown. Grey.

30. Colours on light grounds appear darker, on dark grounds lighter than they really are.

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31. If colour be applied to ornament in relief, the ground should be darker than the ornament. There is an exception to this where gold is used.

32. Harmony of colour can only be produced by contrast, but all contrast is not harmony. Harmony is an agreeable contrast,—that is, pleasing to the eye as a chord is to the ear in music.

No positive rules can be laid down for the harmony of contrasts. It appears to depend very much upon what is called an "eye for colour." Mr. J. G. Crace says that "an experienced artist can bring any two colours together." He, however, has given the following useful list of agreeable contrasts:—

1. Black and warm brown.
2. Violet and pale green.
3. Violet and light rose colour.
4. Deep blue and golden brown.
5. Chocolate and bright blue.
6. Deep red and grey.
7. Maroon and warm green.
8. Deep blue and pink.
9. Chocolate and pea green.
10. Maroon and deep blue.
11. Claret and buff.
12. Black and warm green.

33. As our primary colours are not perfect, we are often obliged to oppose them to dull and dark colours in order to raise them in the scale of brightness, so as to make them appear of more perfect tones.

The most refined carmine when compared with the natural colour of the scarlet geranium is reduced, by contrast, to almost a brick-colour.

34. It is a very easy matter to reduce the brightness of colours, but less so to make them appear bright.

35. All secondary and tertiary colours should be graduated to harmonize with the primaries.

36. In using the primaries it should be understood that blue retires, yellow or gold advances, while red holds an intermediate position.

Field gives the proportions of the primaries which neutralize each other to be 3 yellow, 5 red, and 8 blue, thus showing that it would take only three superficial feet of yellow to neutralize 8 of blue. Yellow represents light; red, heat; and blue, cold.

37. Design must necessarily be defective if applied indiscriminately to different materials. All materials require difference of treatment according to their nature.

38. Originality should never be adopted for the sake of novelty only.

39. Unity without variety produces uniformity and insipidity. Variety without unity results in confusion, or the absence of design.

40. There are two different principles in architecture: the horizontal, in the classic buildings of antiquity; and the vertical, in the edifices of the mediæval period. The first is represented by the beam, the second by the arch.

These principles are founded upon the practice of Art in the best ages, and are advocated in the body of the Work, where it will be seen that they are further elucidated.

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CHAPTER III.

ORNAMENT OF SAVAGE AND EARLY TRIBES.

IT is not an unprofitable study, when we endeavour to go back for the purpose of examining the works of those earlier races of men among whom some of the most elementary forms of ornamentation have arisen, to see by what means they tried to decorate and make more beautiful, the utensils, implements, or weapons they were forming. For whether it be a domestic vessel, a canoe, a paddle, or a war-club, we know that they must have dwelt upon them with pleasure, while they covered them with various lines and forms. They patiently carved their canoes and other wood-work with notches and curves of every description, until they gave the whole surface a quiet richness and beauty, that it did not before possess. This they did, too, from an innate love of ornamentation, which became without doubt fascinating to their eyes.

How did this love of enrichment arise in them? Why, they looked up into the sky of a calm day, and they saw it flecked with delicate white fleecy clouds, frequently so minutely divided as to appear like fairy-land —or, upon a clear night they beheld it studded and covered with thousands of stars sparkling like diamonds. They looked upon the sea-shore and observed the delicately rippled surface of the sand as left by the receding tide—or, they examined the shingly beach covered with beautiful shells and pebbles. They saw how the earth which they trod was carpeted with herbs of all kinds, with their flowers of bright colours at frequent intervals. They beheld the trees clothed with their various leaves of exquisitely graceful forms. They looked also at many of the wild animals and found them striped or spotted in the most beautiful manner. And so on, throughout all nature, until they came, after examining things more narrowly, to the wonderful colours of birds and insects—

> "Fairy-framed and many-coloured things,
> Who worship Him with notes more sweet than words,
> And innocently open their glad wings,
> Fearless and full of life."[1]

Thus the primitive races, seeing all nature clothed with beauty, imbibed their love of art, and as children of nature, covered their arms and utensils with the simple forms which came readiest to their hands, or were most easily made with their rude instruments.

But their ornament oftentimes was of use as well as for enrichment. The carving of the handles of their war-clubs gave them a roughness sufficient to assist the hand in seizing them firmly. As the striped form of the tiger of the jungle, too, produced terror in their minds, so for the same reason they tattooed their faces (Fig. 22) and other parts of the body, in order to

[1] Lord Byron's *Childe Harold.*

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strike terror into their enemies, and they used violent and repulsive colours to heighten the effect of their punctured lines.

The carving of surface they did upon the

Fig. 22.

true principle upon which ornamentation should be applied. Their lines and forms were cut out of the surface and not added upon it. Thus we find that the earliest inspirations of nature will invariably lead men right if they will but follow these natural promptings. Instead of which, as man becomes more educated, he scorns the works of nature, thinking he can safely trust to his own powers. He soon begins to pile up his ornament upon his own works, loses their original and appropriate forms in crowded and vulgar ornamentation which he overlays upon them, until at length he arrives at an agglomeration of forms, which although consisting of large masses, often of very beautiful workmanship, are neither useful nor convenient for the purposes intended. Thus it was, after the lapse of time, that abuses in ornamentation arose, and buildings became overloaded with useless and superfluous parts, so that their original construction oftentimes became in a great measure veiled, and they at length assumed numerous features of unmeaning exuberance.

The forms of enrichment used by the savage tribes of the South Sea Islands are simply geometrical, or are suggested by nature, and are frequently flowing and graceful. Much of their work, however, has a mystical air, and may possibly have a meaning, or a symbolical character. "It is only beginning to dawn upon us how wide and comprehensive this system of symbolism had become in past times. It seems to have embraced everything. The flowers of the field were symbols; the trees of the forest had each some sacred meaning; the animal world figures largely in the old system; the stars are known to us from the zodiac or forms of living things, which are older than any history we possess."[1]

Although there is an extreme rudeness in the forms used by savage tribes, yet there evidently is a meaning which runs through them, and there cannot be a doubt that many of them are of a highly symbolical character, had we the power to read or interpret them. They do not approach anything which may be dignified as works of art. Still they are the germs of art, and they usually possess art feeling. The savage races appear, in many cases, to have drawn their figures and other devices without much care or thought, much as boys would draw with a piece of chalk. There are certain careless imitations of the human form, but all proportion or expression is wanting. As primitive designs they should be examined, for it is from such attempts as these that art arose, and to an artistic mind they will frequently offer suggestions that may

[1] From a paper on Symbolism, read at the Society of Arts by Mr. William Simpson.

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be sought for in vain even in more perfect works.

We owe much to the potter's art for handing down to us many of the forms of early ornament, from the ease in which zigzag and other lines are made in wet clay, and then rendered indelible, from the effects of time, by the aid of fire. Of all the skilled works of man perhaps those of terra cotta are the earliest of which we possess actual examples. Birch, in his *History of Ancient Pottery*, tells us that "the existence of earthen vessels is coeval with the formation of a written language, 2000—3000 years B.C." Dr. Schliemann, in his *Troy and its Remains*, gives examples of early ornament upon vases and other works. On perforated terra cottas, which he found in great numbers, and which he calls "whorls," are representations of animals, such as stags, made simply by an incised line in the most primitive manner; a single line serving equally for body, legs, head, and horns. Yet the potters who formed these were, no doubt, in many respects, highly civilized; but they repeated the rude forms, from habit, that had been used by many generations of potters before them.

PLATE 1.

Nos. 1 and 2. What are called frets or meanders are common in all early work; of such are these rude frets, which are ancient Mexican.

No. 3 is an ornament of somewhat similar character. Strange, uncouth variations of such forms, which possibly had a meaning of which we have no solution, are found in the ancient cities of Mexico and Central America. These ornaments are applicable to the enrichment of narrow bands of stonework or other material.

No. 4 may have been suggested by feathers, and consists of gracefully flowing lines, fitting one into the other. They represent incised lines engraved on a plain surface.

Nos. 5, 7, and 8 are enrichments for upright surfaces. The first appears like an impress in clay of a hieroglyphical character. No. 7 looks to be a series of birds' heads piled one upon another, as on a door post, and reminds one of the rude cats' heads of our own Norman work. No. 8 is evidently from matting. Similar zigzag lines are to be found worked out in many ways. The zigzag has been noticed by various archæologists as being one of the earliest and most widely spread of all ornaments which are to be found among the most primitive works of mankind. We may easily imagine it commencing with the scratched lines on wet clay, or the alternate notching of a stick, as in Figs. 23 and 24. From this by an angular

Fig. 23.

Fig. 24.

Fig. 25.

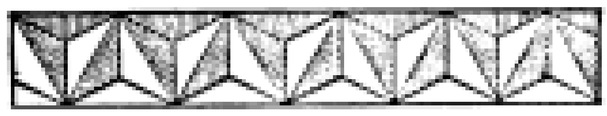

Fig. 26.

tool the workman soon arrived at the zigzag formed by recessed triangles, Fig. 25, and the star-form, Fig. 26, all of which are common on the clubs of the South Sea Islanders. These ornaments are all monotonous, and

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simple repetitions of the same form. Repetition, however, is one of the means of giving pleasure to the eye, so common, that it is of constant occurrence in every known style or mode of ornamentation. It is equally frequent in nature.

No. 6 is a peculiar example of a crowned figure, and may possibly represent a prisoner taken in battle, and condemned to occupy a confined and cramped position. The head has a beard, the biceps of the arm is indicated by a scroll, and although nearly bodiless, the knee, calf, and ankle-bone are clearly expressed, but in an odd conventional manner.

No. 9 consists of flowing and interlacing lines, combined with faces, and running into a beak or species of bird's head at the top.

No. 10 may represent a mask with large goggle eyes, mouth and tongue. It is after the manner of a tattoed face, as seen among the New Zealanders.

No. 11 exhibits the use of colours, consisting of red, black, and white, and is apparently taken from leaning blocks, such as bricks, each being impressed with a stamp. If made continuous, it will be observed that the red and black alternate at regular intervals.

No. 12 is a carved idol, which besides the rudely formed side figures of grotesque shapes, contains in the centre the suggestion of a face with two eyes, appearing as if rising above the triangle.

No. 13 is ancient Mexican. It is strange and uncouth, without much beauty of form, and probably contains the name of some great personage or king, as the centre is formed of what appear to be arbitrary characters.

No. 14 is a diaper with animal or cat's head, triangles and stripes. It also serves to show how prevalent geometrical figures were, even in the rudest ages. The angle squares contain a diagonal cross or saltire with square centre containing a diagonal square of the same breadth as the saltire. These angle squares might easily pass for mediæval tiles.

Nos. 15, 16, and 17 are applicable for bands of stonework executed in relief or incised. No. 15 may have been suggested by steps added to an imperfect fret. No. 16 by the surf of the sea. A somewhat similar form is found in the Greek. No. 17 is an incised line consisting of two alternating semicircles dove-tailing into one another, looking like a folded ribbon or plaited cloth.

Many more rude yet highly suggestive forms might have been given, but these are considered sufficient, to give a tolerable idea of the primitive efforts of mankind in the ornamentation of surface.

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CHAPTER IV.

EGYPTIAN ORNAMENTATION.

THE great antiquity, the vast size, grandeur and perfection of workmanship,—the mysterious hieroglyphics, brilliant colouring, and strange symbols by which the monuments of Egypt are covered, all combine to render them objects of intense interest. The mind of the beholder is impressed with the conviction that the world has hitherto produced nothing, in the truly sublime, that excels Egyptian architecture.

At a remote period, which is at least two thousand years before the Christian era, Egypt was a highly civilized country with a vast and teeming population. These early workers, who were far in advance of the rest of the world in the cultivation of the arts, covered their land with grand enduring monuments—pyramids, temples, obelisks, colossal statues, and tombs, many of which have lasted to our own time. Some of them are in the form of gigantic erections, built in limestone or sandstone, while others are hewn out in the solid rock itself.

Of the three pyramids of Gizeh, two of them are at once the oldest and the largest structures in the world. One of them rises to a height of about 500 feet, which is higher than any tower or steeple in existence, and the other is but very little less. The great pyramid stands upon nearly eleven acres of ground; its base is square, and its four flat sides slope backwards, like the steep roof of a house, giving it the most simple as well as the most lasting and strongest of all forms. In the middle of this mountain of stone is a small chamber, covered with a flat stone, and entered by a narrow passage, the entrance to which was carefully concealed and built up in solid masonry. Within that chamber was the sarcophagus which contained the king's body; the preservation of which is supposed to have been the sole object for the erection of this enormous pile.

Egyptian chronology is an obscure and difficult subject, upon which it would be useless to enter here; but it may be briefly mentioned that the early history of this extraordinary people is divided by themselves into no less than thirty-one periods corresponding with the dynasties which reigned over the country till the conquest of Alexander the Great. Modern writers recognize two great periods, during the first of which the pyramids were erected. The more remarkable of these belong to the fourth dynasty, and are situated in the neighbourhood of Memphis, the royal city of the ancient kingdom of Lower Egypt. The second period is represented by the temples and other works erected by the kings of the later dynasties, who reigned at Thebes in Upper Egypt. With the second period, which commenced with the twelfth dynasty, a new era is apparent in the character of the architecture. A series of magnificent

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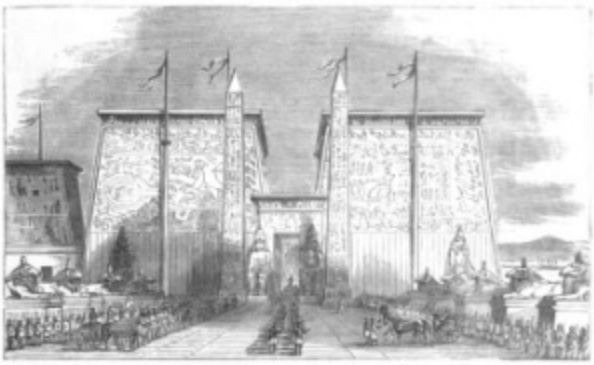
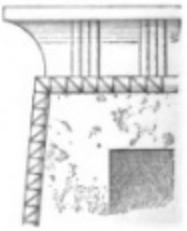
temples, palaces, and tombs, enriched with columns, sculpture, and painting to an extraordinary degree, replace the simple forms and style of the earlier period. The pyramid no longer appears, but the pyramidal form is frequent, and manifests itself in the inclined wall surfaces of the temples and in the obelisks, which are two of the principal features of the style.

Fig. 27.



The Egyptians, moreover, surpassed all succeeding ages and styles in the power of adapting sculpture and painting to the decoration of their buildings. Their colossal figures and avenues of sphinxes group themselves, with their obelisks and temples, into one great design. Their historical paintings, also, gliding by degrees into hieroglyphics on the one hand and into sculpture on the other, succeed in harmonizing all the arts into one grand whole. Some slight idea of the magnificence of their works may be obtained from Fig 27, which is a restoration of the great temple of Luxor, at Thebes. It shows the broad sacred way, leading to the temple, flanked on either side with variously headed sphinxes, an approach which was sometimes more than a mile long; the obelisks, on each side of the entrance; the gigantic seated statues of their kings, or pharaohs, as they were called; and the lofty coloured poles bearing banners floating in the wind. The surface of the pylon itself was covered with highly coloured sculptures of the victorious Rameses, or other pharoah, in his chariot with extended bow slaying his enemies, trampling them under his horse's hoofs, or dispersing them in flight. On the other hand he would be represented seated on his throne, in godlike attitude dispensing blessings to those around him. The whole approach, probably, lined with thousands of soldiers and slaves, with various chariots, was well calculated to impress every beholder with the utmost awe on approaching the fane of their gods!

Fig. 28.



Mouldings are of unfrequent occurrence upon their temples, with the exception of a bold hollow cornice by which the propylon[1] or entrance is crowned, Fig. 28, the hollow being filled in the centre by a winged globe, as in No. 10, Plate 3. The torus at the foot

[1] The propylon, from the Greek *pro*, before, and *pylon*, a portal, was the entrance to an Egyptian temple, and consisted of two huge pyramidal towers, which were sometimes as much as 200 feet wide and 100 feet high; in the centre of these was the grand gateway, from 30 to 50 feet in height (Fig 27).

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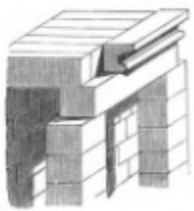
of the hollow is continued down the angles of the building, the remainder of the wall face being left unbroken for the purposes of surface decoration in sculpture, painting, and hieroglyphics, after the manner of No. 13, Plate 4.

Fig. 29.



The interior of their temples consisted of open courts surrounded by columns, and halls having numerous columns, carrying a series of stone lintels, which supported the enormous flat stones that formed the ceilings and roofs. This will be better understood by reference to Fig. 29, which shows the similar construction of the roof of a propylon. The columns, although mostly circular in plan, vary considerably, and their capitals are of several forms, but of a limited number of types and many varieties. The temple of Luxor contains some which are formed of a cluster of eight shafts, or as if eight stalks of the papyrus plant were tied together by bands, Fig. 30, the plan of which is given at Fig. 31. On the top of each division is an unopened bud of the same plant forming the capital. The shafts get smaller towards their base, and rise out of several leaflets as in the natural plant. The columns are usually covered with hieroglyphics. The Hall of Columns in the temple of Karnac has the side columns derived from a single stalk of the papyrus plant of much the same general form as the previous example, but circular instead being shafted (Fig. 32), and the capital is formed of one unopened bud. The large columns of the centre avenue are in the form of single stalks of an older growth, with a full-blown flower for the capital, Fig. 33. Other capitals are formed of four flowers, as shown by No. 8, Plate 2, which represents the half of a capital developed or laid out flat. Capitals are also sometimes composed of four Isis heads rising out of the flowers, with small temples above, as in Fig. 34, which is from the colonnade at Philæ. Other examples

Fig. 30.

Fig. 31.

Fig. 32.

Fig. 33.

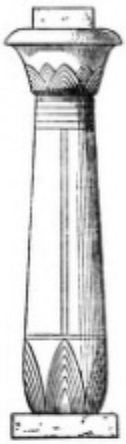


Fig. 34.

Fig. 35.

Fig. 36.

Fig. 37.

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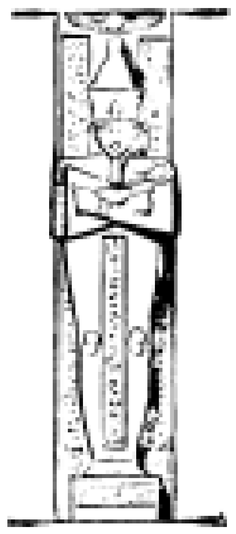
are very gracefully formed of the flowers of the lotus, Figs. 35, 36, or of palm leaves, Fig. 37. Of this last the temple of Esneh has a number of beautiful varieties.

A series of piers in the Memnonium at Thebes, have their fronts formed of colossal statues, 30 feet high, representing Rameses II., under the type of Osiris, the great Egyptian divinity, and husband of Isis, holding the crook and flail, emblematical of his protecting care of his people and of his power to punish evil-doers, Fig 38.

Fig. 38.



The carving of his own tomb out of a solid rock appears to have been one of the chief objects of an Egyptian king during the entire period of his reign. According to the number of years he continued on the throne, so would appear to be the extent of his tomb, and he went on adding chamber after chamber, diving deeper and deeper into the earth until arrested by the hand of death. It therefore happens that these tombs are scarcely ever complete. Side by side with chambers finished and decorated with paintings representing nearly every kind of employment in life, are others in various stages of progress, some half tunnelled in the rock, others with the stone brought to a smooth surface prepared for painting and sculpture; some partially carved, others carved and partly painted; so that in a succession of chambers the whole process is seen, which each in its turn had to undergo. The extraordinary dryness of the climate of Upper Egypt has, no doubt, contributed greatly to the perfect preservation of the decorations of these rock-cut tombs.

It may be interesting to state the manner of proceeding. The wall was first chiselled and brought to a smooth surface, or plastered and covered with a yellow wash. Lines were then ruled perpendicularly and horizontally with red colour, forming squares all over the wall, corresponding with the proportions of the figures to be drawn upon it. The subjects of the painting, and the hieroglyphics, were then drawn on the wall with a *red line*, most probably by some inferior artist, from a document or model divided into similar squares; then came the chief artist, who went over the figures and hieroglyphics with a *black line* and with a firm steady hand, giving expression to each curve—deviating here and confirming there, the former red line. The line thus traced was then followed by the sculptor. In this stage there are instances of a foot or head having been completely sculptured while the rest of the figure remains in outline. The manner of sculpturing these objects in low relief was either simply by incising, or by first incising the line round the object and then moulding the surface within to correspond with the various parts represented. This is indicated in the example No. 4, Plate 2. In the Assyrian wall subjects the ground is worked away so as to leave the object raised above it, although very slightly; but in the Egyptian the ground is left standing, and the object is sunk below its level, although the surface of the ornament is moulded, as in the example Fig. 39, and as shown by the section Fig. 40. This process is distinguished as being in *cavo relievo*.

Fig. 39.

Fig. 40.

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The next process was to paint the figures in the prescribed colours; and in some cases the painted line deviates from the sculptured line, showing that the painter was the more important workman, and that even in this last process no possible improvement was omitted. There are other instances where a considerable deviation from the position of a leg or an arm has been made after the sculpture was completed and painted. The part was recarved and the defective portion filled in with plaster, which having since fallen out furnishes this curious evidence of their practice.

The whole of this may be seen in various tombs at Thebes, but in none so well as in that discovered by Belzoni. When this tomb, which is that of Oimenepthah I. (B.C. 1200), was opened by this enterprising traveller, it was found in the same state of freshness as when closed on the death of its occupant. The sarcophagus found there, which is formed out of one solid block of alabaster, was removed, and is now in Sir John Soane's Museum in Lincoln's-Inn Fields. It is one of the most interesting objects that has ever been brought to this country, and deserves careful study. It is covered with hieroglyphics and figures inside and out, which represent a complete history of the supposed wanderings of the souls of men after death; showing their passage, by a boat, through the various gates of Hades, and their struggles to overcome the evil one, who is typified in the form of a serpent.

There are also specimens of paintings brought from some of the tombs of Thebes in the British Museum which are very interesting, and with the exception of a few peculiarities, extremely well drawn. One especially, which represents an Egyptian of high rank in a boat, accompanied by his wife and child. He is fowling in the marshes, in which there is a cat among the rushes, remarkably well expressed, catching some of the birds, and evidently trained for that purpose. There are others representing entertainments, at which music and dancing are being performed; slaves bringing oxen, while others are driving geese; slaves carrying hares, corn, and a gazelle; offerings being brought to the gods; besides many other subjects.

The colours used by the Egyptians are usually simple ones, such as red, blue, and green, with black, yellow, and white—the three first being the most frequent combination. The primaries are used invariably with judgment and knowledge. Red and blue are never found in juxtaposition without the separation of a narrow line of white or yellow. Black is invariably contrasted with yellow; gilding is employed sparingly, and generally with considerable taste.

The excellent materials for building naturally found in the country, determined in a great measure their style of architecture. They had an abundance of both limestone and sandstone, and at Syene, in Upper Egypt, unlimited quantities of beautiful granite, of different kinds, capable of receiving a very high polish, and resisting the action of the elements for an indefinite length of time, as may be seen by the perfect polish still remaining on many of the Egyptian antiquities now in the British Museum. Of this granite, which is mostly of a beautiful red, they were able to obtain enormous blocks, some of the obelisks of this material being as much as 80 or 90 feet long, wholly in one stone. The largest of these, which is at the temple of Karnac, weighs not less than 297 tons, and these, in many

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cases, had to be transported from one end of the country to the other.[1] Basalt, marble, limestone, freestone, and alabaster were also found beyond all limit. The country, however, was very deficient in timber, especially that sort proper for building. Oak is not to be found, and the fir used by the present inhabitants has to be imported from Arabia.

Bricks dried in the sun were sometimes used even in large structures, but were probably faced with stone or granite. The masonry is ordinarily set in mortar, composed of lime or plaster and sand, but in some instances cements of a bituminous nature were employed. There are, however, many cases where no mortar or cement can be detected.

Some of the temples, and many of the tombs, were hewn out of the rock itself. The architecture, therefore, of these Egyptian pharaohs was an enduring one, and their ambition appears to have been to make their works last throughout all time. Their temples were roofed with large flat stones, as already mentioned, and no appearance of sloping roofs, pediments, or arches is anywhere to be traced.

One of the most valuable lessons to be gained by the study of Egyptian architecture is the exquisite treatment of flat surfaces. These were for a twofold purpose; that of serving as a public record of the greatness and power of this extraordinary nation, and at the same time for the artistic embellishment of their works.

This enrichment of flat surface among the Egyptians was at the same time essentially symbolical, and was mainly derived from natural objects treated in a conventional manner. These, combined with hieroglyphics, constituted the basis of nearly all their ornamentation. The sun itself, as one of their objects of adoration, was introduced ornamentally in a great variety of symbolical forms; as in the winged globe, No. 10, Plate 3. But there is another image of the sun which should be mentioned. A ball or sun is frequently found in connection with a beetle, and this insect was looked upon as a sacred object. This appears to be due to the beetle depositing its egg in the refuse of some animal, and after forming the portion containing the egg into a small ball, burying it in the earth where it will catch the rays of the warm sun, and in due time bring forth a perfect insect. This circumstance seems to have connected the insect in the mind of the Egyptians with the creator, of whom the sun was the symbol. A round ball or sun was therefore placed above the head of the deified beetle, as shown in the hieroglyphics No. 13, Plate 4. The disk also surmounted other deified forms, such as the haje, No. 2, Plate 3, and many other sacred objects.

Among plants the types employed in Egyptian ornamentation were few, and were mostly confined to the papyrus, the lotus, and the palm. The equilateral triangle is said to have been a sacred conventional sign, as being the supposed origin and source of all things. It is even thought that the pyramids, which were formed of four equilateral triangles meeting together in a point

[1] The obelisk now erected on the Thames Embankment, which was brought over to this country at the expense of Mr. Erasmus Wilson, originally stood with others in front of one of the ancient Egyptian temples, although many centuries afterwards it was removed and set up in Alexandria by Queen Cleopatra, from which circumstance it obtained the name of "Cleopatra's Needle." This obelisk, which is 68 feet in height, was hewn out of one block from the quarries of Syene. It is of the quality of granite, called from the name of the quarries, Syenite; and it is supposed that it was formed and polished on the spot where it was raised.

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at the apex, had from this reason a highly symbolical meaning. The stem of the papyrus being of a triangular form seems to have recommended it to notice, and when we find columns formed of bundles of this plant there can be no doubt again of their symbolical signification. The lotus, which was sacred in India as well as in Egypt, was

Fig. 41.

symbolical of the new birth or eternal life. It formed the ideal symbolization of the seasons succeeding from generation to generation—bringing back life when there appeared to be nothing but the apathy of death. The reappearance of the sacred lily of the Nile, upon the lowering of the waters, season after season, gave promise of a happy land. Thus when we see this flower represented, as it so frequently is, upon a mummy case (Fig. 41), it was regarded as an emblem of faith in an eternal life where this worshipped flower would bloom for evermore. It is first seen in bud (Fig. 41), then while still in bud, rising through the conventionally expressed water until the fully expanded flower on the top indicated that the waters having receded, it was henceforth welcomed as the harbinger of plenty and a happy land where scarcity would be never known.

The palm-tree was the tree of life, and was supposed to be the sacred tree in the paradise of Osiris. The zig-zag was the type of water, or the Nile itself. Thus a deeper meaning than mere enrichment pervaded all Egyptian ornamentation, giving nearly every form an ideal and a poetical signification. Some forms which they used, such as the meander and scroll, as well as a few others, had apparently no such meaning, unless, indeed, we have now lost the means of their interpretation.

The vigour, accuracy, and power of drawing exhibited by the Egyptians in all their works have never been surpassed, although, from their religious principles, they purposely retained such stiff and rigid forms—to all appearance resisting the freeness of their hand. The laws which guided them in their art were thus closely connected with their religious principles.

Plate 2.

No. 1. Head crowned with leaves and buds. The beard and hair crimped horizontally as represented in Egyptian sculpture.

No. 2. Frieze with flowers and buds in low relief growing from water.

No. 3. Geometrical arrangement of leafage or palm grove, with crowned serpents below. The haje, or African cobra, when excited stands erect and swells out its body as here represented. The serpent was considered sacred in Egypt. It is not uncommon to

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find entire sculptured friezes and borders composed of a succession of these cobras, each surmounted by a disk to indicate their sacred character.

No. 4. The papyrus in flower, bud, and seed. It is thus represented in low relief on the pedestal or altar in front of Hapi-moon, the god of the Nile, with other aquatic offerings. The statue is in black granite, and is now in the British Museum. It was brought from Karnac.

No. 5. Frieze or cavetto containing heads of the goddess Isis, which are thus found crowned with small temples (see also Fig. 34). The heads are alternated with serpents and palm-trees.

No. 6. Leaf cornice. The only kind of cornice found (if it can be called a cornice) is formed by a large hollow springing from a torus or bold bead, as in Fig. 28.

No. 7. Frieze of lotus and cartouche alternating. Hieroglyphics surrounded by an oval line either upright or horizontal, called a cartouche, are of frequent occurrence and indicate a proper name, as that of a monarch, the one in the centre of this example reading KLEOPATRA. The two signs on either side of the lower bird indicate the feminine.

No. 8. One-half of a bell-shaped capital, developed or laid out flat. Many of the capitals have the upper portion or lip of the bell formed of four arcs of a circle surrounding a square, after the manner of a quatrefoil.

No. 9. Lotus growing in water, with band of eyes and stars above. Water was usually represented by zigzag lines. The band containing the star indicated the heavens, and, probably, the eyes represented those of the deities, looking down upon the acts of men.

No. 10. Symmetrical arrangement of elongated incised lines with lotus and buds.

No. 11. Ornament formed of the lotus. Band of reeds and vulture. The universal application of the lotus, or water-lily of the Nile, which was a sacred plant among the Egyptians, is very remarkable, and is found in every variety among the paintings and sculpture.

Plate 3.

No. 1. Baboons and fig-tree. The power of the Egyptian artists in expressing the character of animals by little more than simple outline was very remarkable.

No. 2. Bundles of lotus with the haje or cobra surmounted by a globe or sun.

No. 3. Spoon or ladle formed of a slave bearing on his head a bundle of reeds and lotus. In the Louvre and British Museum

Fig. 42. Fig. 43. Fig. 44.

are many utensils ornamented by the lotus, but the use of the figure in this instance is somewhat questionable. There are examples also of a fish being converted into a dish, a hand into a scoop, &c., but such instances are rare. These conceits, however, are not confined to the Egyptians, for we find Etruscan and early Greek vases composed of figures and heads, with cavities in the cranium (Figs. 42, 43), or covered with rudely formed animals, Fig. 44, and

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Greek lamps made out of masks, feet, hands, animals, &c., but such applications are hardly within the province of refined taste.[1]

No. 4. Cobra with the disk and flower ornament.

No. 5. Duck, showing the conventional treatment of the feathers as if formed of platted reeds.

No. 6. Centre ornament formed of triple fish and lotus flower.

Nos. 7 and 8. Painted bands, such as are found on mummy cases. See also Fig. 41.

No. 9. Star-form tile or diaper.

No. 10. The winged globe, accompanied by asps, the type of the sun, a sacred emblem of the highest order, and usually placed over the entrances to the temples. The wings are supposed to be those of the hawk, and are also symbolical of the sun, on account of the elevation to which this bird continued its flight, and of the faculty which it was considered to have, of looking at the sun with a steady gaze.

No. 11. Bold lotus treatment with flowers, being the same in all four ways that it is looked at. The flat ceilings of the temples were usually covered by painting in this manner.

No. 12. Frieze formed of bearded heads ornamented with head-dresses of banded reeds, alternating with lotus buds.

PLATE 4.

No. 1. Lotus and aquatic plants bound together and arranged symmetrically.

[1] Of a similar character, also, are the owl-headed vases found by Dr. Schliemann on the site of Troy.

No. 2. Fan-shaped standard ornament.

No. 3. Lotus band. Many of the mummy coverings, as in the British Museum, have bands and enrichments of this character, executed in gold and colour. See Fig. 41, also incised as Fig. 45.

No. 4. Emblem of security alternating with buds.

Nos. 5 and 6. Diapers or tiles.

No. 7. Throne bound by aquatic plants and the lotus of the Nile, emblematical of Egypt and its fertility.

No. 8. Lotus flowers and buds growing on the water.

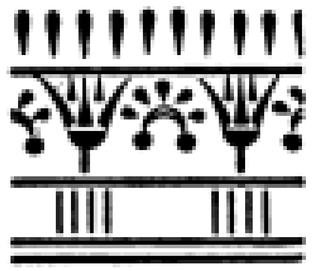
No. 9. Border formed of a row of temples on a river. An example of doubtful taste, and rather to be avoided.

No. 10. Band for painting. Bound reeds with lotus flowers and buds.

No. 11. Bundle of lotus with the emblem of security and feather crest.

No. 12. Papyrus with emblems of stability above.

Fig. 45.



No. 13. Ornamental frieze or band divided by reeds with cartouches and hieroglyphic writing.

Nos. 14 and 15. Papyrus and lotus. Fig. 45 represents the lotus as incised in granite, from the collar of a figure upon the cover of a sarcophagus in the British Museum.

No. 16. Decorated cartouche or shield.

No. 17. Circular ornament with lotus growing in water.

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CHAPTER V.

ASSYRIAN ORNAMENTATION.

THE style of art which has been brought to light of late years by the excavations of M. Botta, French consul at Mósul, and Mr. Layard, has revealed to us some marvellous work of a kind hitherto unknown, but we cannot go so far as to say that these excavations have brought to light any complete style of architecture. M. Botta, on the part of the French government, commenced his excavations at Khorsabâd in 1842, and in the space of a few months a large number of halls and chambers were completely explored, belonging to a magnificent edifice whose walls were all panelled with sculptured slabs. In November, 1845, Mr. (now Sir) Austen Henry Layard commenced his excavations upon the great mound of Nimroud, and after some considerable trouble came upon those colossal human-headed lions and bulls which are now in the British Museum. After some months' labour, five-and-twenty halls and chambers were explored, all panelled with slabs of alabaster—some sculptured with figures, others merely inscribed with Assyrian writing, engraved upon the stone in what is called, from their peculiar shape, arrow-headed or cuneiform characters. Upon Mr. Layard's return to Assyria in 1849 further discoveries soon followed; among others the vast and magnificent palace of Sennacherib at Kouyunjik, built about 700 years B.C. Some idea of the enormous extent, and of the richness and variety of decorations in this palace, may be formed when it is mentioned that "no less than seventy-one halls, chambers, and passages were explored, whose walls, almost without an exception, were panelled with slabs of sculptured alabaster, recording the wars, the triumphs, and other great deeds of the Assyrian king; that by a rough calculation about 9880 feet, or nearly two miles of bas-reliefs, with twenty-seven portals formed by colossal winged bulls and lion sphinxes, were uncovered."[1] Among the most interesting bas-reliefs discovered are some representing the king hunting lions in a royal park or paradise; a campaign against the Arabs, who are mounted on dromedaries; a palace with all its architectural details, and a bridge with pointed arches; the transporting of the colossal bulls; numerous battles and sieges; as well as one where the walls of a city are being knocked down by a battering-ram. The most important of these sculptures have now been placed in the British Museum, and may be there studied.

The exterior of these palaces, which were nearly square, had generally two façades, which consisted usually of three entrances, each entrance being flanked by two colossal human-headed bulls or lions. An eagle-

[1] *Nineveh and Babylon*, by Sir A. H. Layard.

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headed lion of this character is given at No. 6, Plate 6. The walls, which were of extraordinary thickness, were solidly constructed of sun-dried bricks, and were usually panelled or faced with slabs of alabaster or some other stone, elaborately carved with figures and other subjects in low relief as before mentioned.

The whole of the upper parts of these buildings, with the exception in some cases of a few feet of sun-dried brick wall, have fallen in and perished. All that remain, therefore, of the Assyrian edifices are those lower parts which being faced with stone have been able to resist the ravages of time. But little is known of what the upper parts consisted, further than that most probably they were of wood. Among the edifices uncovered were some that had evidently been destroyed by fire, the ruins being buried in charred wood, and the alabaster almost reduced to lime. At Nimroud many entire beams of cedar and other woods were found in the ruins, some still entire, others that fell to an almost impalpable powder as soon as exposed to the air.

It is supposed by Mr. Fergusson that in the remains of the palaces of the ancient Persian kings found at Persepolis and Susa we have a clue to the restoration of the upper stories of the Assyrian palaces. That columns of a similar character to those there found were employed to carry the massive beams which formed the framework upon which the roof rested. Some of these columns are double-headed, of which No. 11, Plate 6, offers an example of a similar character. The shafts were fluted and the bases were enriched, after the manner shown by the examples Nos. 4, 5, 12, and 13, Plate 6.

How far this supposition is well founded it is hard to say; but although we see a vast quantity of beautiful sculpture, it is evident we have only the remnants of a style which in its entirety must have possessed great grandeur and beauty. That it was originally derived from the Egyptian there can be little doubt; still there are many marked and broad differences.

There is one point connected with the remains discovered at Nineveh which adds great interest to them: the similarity which appears to have existed between the architecture of the Jews and the Assyrians. In the description of Solomon's Temple given in the book of Kings the walls appear to have been covered up with carved woodwork much in the same manner as the Assyrian palaces were panelled in stone: "And he built the walls of the house within with boards of cedar, both the floor of the house, and the walls of the ceiling: and he covered them on the inside with wood, and covered the floor of the house with planks of fir. . . . And the cedar of the house within was carved with knops and open flowers; all was cedar; there was no stone seen" (1 Kings vi. 15, 18). Again, "The two doors also were of olive tree; and he carved upon them carvings of cherubim, and palm-trees, and open flowers" (verse 32). These winged figures, although carved upon the doors, appear to answer to the winged figures guarding the entrances to the Assyrian palaces.

In the mention of the "lily-work" which formed part of the "chapiters that were on the top of the pillars" (1 Kings vii. 19), we are strongly reminded of Egyptian or Assyrian ornamentation, in which the lotus, the lily of the Nile, forms such an ever-recurring enrichment. This flower occurs constantly and in a great variety of forms. It appears in

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the Assyrian, in the lotus and bud ornament, No. 2, Plate 5. Hence in all probability the "lily-work" of Scripture was of this Assyrian character. It also indicates that as "King Solomon sent and fetched Hiram out of Tyre" to work the "molten brass" (or bronze) of the Temple, that the Phœnician had a likeness to the prevailing styles of the time.

The delicacy and the extreme care with which the Assyrian wall sculptures are wrought, developing the minutest detail with the precision of works in ivory, is most remarkable. They are in extremely low relief, scarcely projecting more than from a quarter to half an inch. The ground upon which the sculpture is wrought is worked down—that is, in *bas-relief*, and no parts are in *caro-relievo*, as is so frequently the case in the Egyptian. Many of the dresses of the figures are covered with minute diapers, as shown by Figs. 46 and 47; and Fig. 48 is an ornamented band from a head-dress. The faces of all the figures are in profile, as in the Egyptian; but the shoulders are more natural, and not squared so much as in the Egyptian sculptures and paintings. The eyes, which in the Egyptian are in front view instead of in profile, are in three-quarter view. There are many examples of the palm, date-palm, the vine, fig, tree-fern, and the lily, as well as a tall-growing grass, probably maize, introduced upon many of the sculptures. The sacred tree is also a conspicuous object occurring frequently. It appears to be a palm-tree conventionally arranged with a single and sometimes a double band of flowers or palms surrounding the centre tree. A portion of one is given at No. 13, Plate 5.

Fig. 46.

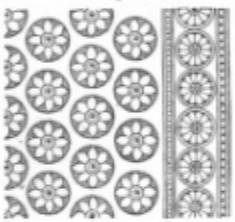


Fig. 47.

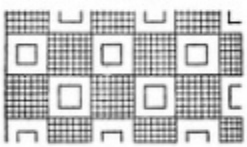
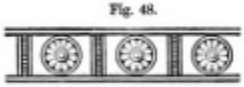


Fig. 48.



Judging by the examples in the British Museum from the palace at Nimroud, their floors also appear to have been often sculptured. The largest example in the Museum, which is wrought in very low relief, apparently in white marble, is formed into square divisions or panels, the centre of each of which is occupied by a rose or patera, from which radiate to the angles four fir-cones, and alternating with them, spreading to the sides of the square, are four lilies or lotus flowers. These square centres are repeated, forming a diaper over the whole surface, separated by borders filled with paterae, Fig. 49. The whole is surrounded by a general border, in which occurs the lotus and bud enrichment, No. 2, Plate 5.

Fig. 49.

The Assyrians were also great workers in terra cotta, of which they made most important use. "Assyrians wrote on terra cotta cylinders, or hollow hexagonal prisms. The cuneiform characters were stamped with a prismatic stick or rod, or perhaps by the edge of a square of metal. It is supposed that 20,000 of these clay tablets or ancient books of the Assyrians, containing the literature of the country, have been discovered.[1]

[1] An account of the flood has been translated from these clay cylinders, and was read by the late Mr. George Smith before the Biblical Society.

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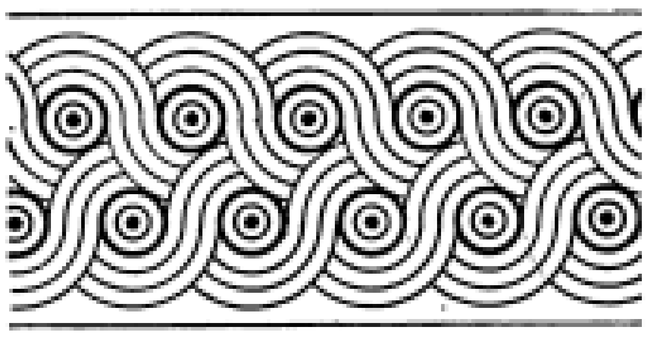
Thus while the paper and parchment learning of the Byzantine and Alexandrian schools has almost disappeared after a few centuries, the granite pages of Egypt and the clay leaves of Assyria have escaped the ravages of time and the fury of barbarism."[1] Not only did they also fabricate every kind of vessel which they required in terra cotta, but they made peculiar kinds of enamelled bricks and tiles, inlaid in colour, from which the enrichment No. 19, Plate 5, is taken, and there can be no doubt that with these they laid many of their floors, and perhaps lined the walls of some of their apartments. There are examples in the British Museum of cast figures in terra cotta, with the terra cotta moulds from which they have been produced.

In carved ivory the Assyrians show considerable skill, and some of their works in this material are also inlaid with coloured enamel. Many examples in ivory are in thin plates, probably for inlaying upon other work, and are incised with lotus and bud,

Fig. 50.



palm ornaments, borders of paterse, and guilloche bands. Fig. 50 is a double guilloche from one of these incised bands in ivory, and is very similar to those found on the capitals of the columns of the Erechtheum at Athens.

Although iron was used by the Assyrians, as well as by the Egyptians, it does not appear to have been very plentiful, and bronze was evidently the most common metal. Knives, adzes, axes, saws, and other implements were usually made of bronze. Many bronze bowls have been found, engraved with various ornaments, while some are very skilfully formed in *repoussé* work; that is, the figures and other enrichments are raised by being beaten up by a hammer from the back, so that they stand in relief, the details being finished by the graver or other tools upon the face of the work.

In colour the ancient Assyrians, like the Egyptians, seem to have revelled. For it is well known that the bas-reliefs which lined the walls of their palaces were all painted and gilded, and in some cases covered with silver and gold plates. Upon this point M. Texier, speaking of Persepolis, says, "I am sure that there was not a corner of the palace in which could not be found the most careful and delicate painting. It was the same at Khorsabâd, at Nimroud, and also at Ecbatana, the capital of Media, where, according to Polybius, describing the palaces of the kings of Persia, the porticoes, peristyles, and the walls were covered with plates of silver and gold, which were pillaged by the soldiers of Alexander." In this again we see a similarity to the work of Solomon's Temple, in the description of which it is stated that "the whole house he overlaid with gold;" and that this was probably done in gold plates we have the further explanation in reference to the doors, that he "covered them with gold *fitted upon the carved work*" (1 Kings vi. 35).

We discover, therefore, by these Assyrian antiquities which have lain so long hidden from view, but which now form such a magnificent collection in our national museum, that the ancient Assyrians cultivated the arts with no mean power six or seven

[1] *History of Ancient Pottery*, by Samuel Birch, F.S.A.

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centuries before our era. In their sculptures we find every variety of action and movement expressed with great judgment and ability. Although the muscles of the arms and legs of their figures are represented in excess, it shows that they took nature for their guide, and did not follow a mere conventional rendering of the human form, as was the case with the Egyptians.

Symbolism, as in all early forms of architecture and decoration, was a guiding principle, and entered very much into most forms of Assyrian art, although not to the same extent as in Egyptian sculpture and ornamentation. Most of the Assyrian wall sculptures were purely historical records of events, which took place during the reigns of the various Assyrian monarchs whose deeds they chronicled.

The primitive or Pelasgic Greek was evidently based very much upon the Assyrian ornamentation, and the form of the Greek honeysuckle may be undoubtedly traced to such examples as No. 13, Plate 5, and No. 3, Plate 6. The guilloche, so frequent in the Greek, is found in the Assyrian, as in the lower part of No. 19, Plate 5. The double guilloche, as found in the capitals and bases of the Erechtheum, may be seen on Assyrian ivories, as already noticed, Fig. 50. The patera also, which is of such frequent occurrence in the Greek, is found in the Assyrian, Fig. 49. What is commonly called the wave or "Vitruvian scroll," is not uncommon, as in the example Fig. 51, which is from the British Museum. Without, therefore, in any way depreciating the skill of the Greeks or the refinement which their genius stamped upon their works, it is extremely valuable and interesting to note from what sources they borrowed some of their forms.

Fig. 51.

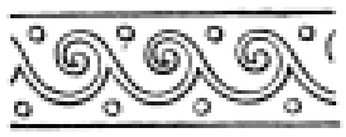

PLATE 5.

No. 1. Lotus and bud ornament, evidently a reminiscence of some of the Egyptian ornamentation, enamelled or inlaid with colour.

No. 2. Lotus and bud ornamentation sculptured in low relief, after the manner of that forming a border to the pavement from the palace at Nimroud, now in the British Museum.

Nos. 3 to 9. Small ornaments, parts of thrones and chairs from the wall sculptures.

No. 10. Centre ornament, giving four different varieties or terminations after the manner of those found among the Assyrian sculptures.

No. 11. Foot of sculptured chair or throne.

No. 12. Castellated termination, suggested by forms found among the sculptures.

No. 13. Palm flower from the terminals of the sacred tree, probably the origin of the Greek honeysuckle.

Nos. 14 and 15. Centre ornaments.

No. 16. Wave and bandolette pattern for painting.

No. 17. Fan and fir-cone ornament. The fir-cone frequently occurs in Assyrian ornament, and some of the priests in the sculptures have fir-cones in their hands.

No. 18. Fir-cone and lotus-bud ornament, somewhat resembling the patterns found edging the robes of the Assyrian kings. The fir-cone is symbolical of fire, the lotus of water.

No. 19. Fan or Palm ornament and alternating bud with guilloche band below. These are found executed in black and white in a species of glazed earthenware tile.

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No. 20. Reeded columns with lotus-bud capitals supporting reel and bead, from Persepolis.

No. 21. Opening bud and fir-cone border, from the edgings to the draperies of the figures in the sculptures.

PLATE 6.

No. 1. Eagle-headed lions and ornament, designed in the Assyrian manner.

No. 2. Rosette or patera. These are of frequent occurrence in the sculptures, as in the pavement from the palace at Nimroud, forming bands of ornament which divide the whole into squares, the squares being filled in with fir-cones and the expanded lotus.

No. 3. Fan or palm ornament in metal filled in with enamel in two colours, from Nineveh. A form of flower which is probably the origin of the Greek honeysuckle.

Nos. 4 and 5. Enrichments from the bases of columns found at Persepolis. These are not strictly Assyrian, but in a closely allied style.

No. 6. Colossal eagle-headed and winged lion, after the remains found at Nineveh and Persepolis. These monsters, found guarding the portals of Assyrian palaces, may in many respects be taken as models of appropriate conventional treatment of animal forms, the majestic strength of the creature being well maintained without a too literal imitation of nature, the graceful attributes of the bird being combined with that of the quadruped. The winged bulls and human-headed lions in the British Museum have the forelegs straighter than in our example, and consequently they have a greater appearance of strength. They have also, when viewed diagonally, five legs. This is a defect which is caused by the attempting to combine semi with whole relief. The muscles of the legs are very much exaggerated.

No. 7. Sacred tree and pomegranates. These sacred trees occur upon the sculptures in different forms, often with priests or winged eagle-headed figures on either side, with a fir-cone in one hand advanced towards the tree, and a vessel in the form of a bucket in the other, said to be symbolical of the sacred elements, fire and water.

No. 8. Sacred ornament with acorn terminations.

No. 9. Diaper and fringe from the sculptured hangings upon the chariot horses. Many of the dresses, harness, and other accessories upon the king's robes, their chariots and horses, are elaborately ornamented and executed with minute delicacy. See Figs 46, 47, and 48, already given.

No. 10. Bas-relief diaper from the sculptures, inclosed pateras and semi-pateras. The sculptures which lined the walls of the palaces were invariably in very low relief, never casting deep shadows or violating that appearance of solidity and flatness so desirable in mural decoration.

No. 11. Twin lions, after the manner of an Assyrian sword-hilt. The capitals of columns from Persepolis are frequently formed with double heads in this manner. Double-headed capitals are also found in the Indian, as may be seen in the sculpture of the cast of the gateway from the Sanchi Tope in the South Kensington Museum.

No. 12. Enrichment from the capital of a column from Persepolis.

No. 13. Sculptured base from a Persepolitan column.

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CHAPTER VI.

GREEK ORNAMENTATION.

MYSTERY and fable enshroud the early history of Greece. The primitive inhabitants were called Pelasgi, hence we hear of archaic Greek art being distinguished as Pelasgic. At an uncertain but very early date, an Asiatic people named the Hellenes immigrated into Greece, in some cases expelling the Pelasgi, and in others intermingling with them, so that in process of time all the inhabitants of the country came to be called Hellenes.

The Greeks were from an early period a great colonizing people, planting colonies and settlements in Asia Minor and the islands of the Archipelago, so that their influence became diffused over an extensive region, including portions of Italy, Sicily, and other parts of Europe and Western Asia. Wherever the Greeks settled they appear to have preserved their nationality; indeed, the cities and territory in Southern Italy which they had occupied were collectively called Magna Græcia. In no country inhabited by the Hellenic race, with the exception of Athens itself, were the arts more highly cultivated than in the ancient Greek colony of Ionia in Asia Minor. Besides many other works, the Ionians erected the magnificent temple of Diana at Ephesus, which was considered one of the seven wonders of the world.

Greek art can, without doubt, be traced to the Egyptian and the Assyrian, although the Athenians and other Hellenic races purified and refined the forms handed down to them. The remains which have been found of the mausoleum at Halicarnassus all point towards this origin. Mr. R. P. Pullan, in a lecture which he delivered at the Royal Institution[1] on the "Excavations in Asia Minor," after adverting to Asia Minor as the land of Homer and the *Iliad*, said "that it was the cradle of Hellenic art, in which respect also it was invested with a never-dying interest. It was there that they could best study the relations between classical art and architecture and those of ancient Egypt and Assyria. At Halicarnassus they found that the oldest Greek remains bore a distinctly Assyrian character. At Assus, also, where there were to be seen the ruins of some of the most ancient Hellenic temples, they had been struck with the palpable traces of the same assyrianizing tendency. The Greek sense of beauty had, however, infused a new life into the more antique and ruder forms borrowed from the banks of the Tigris, the Euphrates, and the Nile." Thus the more these early works in Asia Minor are explored, the more completely will the connecting links between Greek, Assyrian, and Egyptian art be supplied.

The elements of all architecture are few

[1] January 22, 1876.

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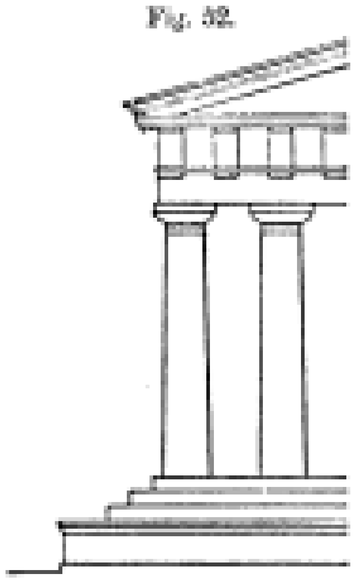
and simple, but in the Greek more especially so. If we take it for granted that we cannot have a building without walls and a roof or covering, it will be found that the elements are limited to the pier, the lintel, the arch, and the bracket. The Greeks used the first two only—the pier and the lintel. For columns are simply reduced piers, rounded for convenience or beauty, and with a capital added to give a firmer bearing to the lintel which they carry. The lintel is also called the architrave, and upon it rested a second course named the frieze, which carried the roof. The eaves of the roof projecting over the frieze became the cornice. The slope of the roof gave the form of the pediment at each end of the building, as indicated by the small diagram of part of the Parthenon, Fig. 52. These simple and primitive forms of construction, when enriched by the consummate skill of the Greeks, were the sole elements of their architecture.

Fig. 52.



The prototype of the Doric order is to be found in the Egyptian, and the origin of the beautiful Greek anthemion ornament, as I have already mentioned, may be traced back through the Assyrian to the Egyptian. There exists an example of what is considered to be Pelasgic Greek art in the Treasury of Atreus at Mycenæ; and a portion of the ornamentation found sculptured in low relief in bands upon the doorway leading to this treasury is represented in Fig. 53. The examples of this archaic period which have been hitherto brought to light are very few, but the recent discoveries of Dr. Schliemann at Mycenæ may prove the means of further elucidating the subject. From his description, however, of the tombs which he has explored, they do not appear to possess many architectural or ornamental features. He speaks frequently of "spiral lines." In one case he says "there was found a very large one-handled golden goblet, decorated with two rows of *beautiful spiral lines*." These I assume to be very similar to those on the stonework shown in Fig. 53, which also occur in rows of two and three deep. Spiral lines of somewhat similar character are found in the Assyrian, and they appear again in the wave scroll (sometimes called the Vitruvian scroll), an example of which, from the roof of the Monument of Lysicrates, is given in Fig. 54.

Fig. 53.

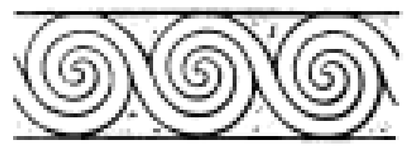
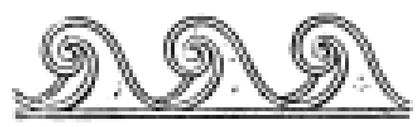


Fig. 54.



Dr. Schliemann also mentions that many examples of that curious cross occur at Mycenæ which he so frequently met with in the ruins of Troy. This he calls a *suastika* (Fig. 55), and says it is thought to be the emblem of the holy fire, the *arain* of the Brahmans. It is worth noticing that it occurs also in many other forms of architecture, as the Etruscan, the Indian, and the Byzantine.

Fig. 55.

It was in sculpture, more especially, that the Greeks made such a vast and wonderful advance beyond the works of all previous nations. No period during the whole course

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of their art history affords so striking an instance of sudden and rapid progress, as during the age of Pericles, which lasted only from 466 to 429 B.C. Athens at that time had reached the height of her greatness. "She had now, in fact, become the capital not merely of Attica, or even of Greece proper, but of the whole civilized world; and by the liberal rewards which her princely wealth enabled her to bestow on men of genius and learning, had drawn into her bosom the most eminent philosophers, orators, poets, and artists, from all parts of the earth."[1]

It appears to have been the primary object of Pericles to render Athens the most brilliant city in the world, not only for power, but for the display of works of art and the cultivation of literature. The Parthenon, the most important and the most beautiful of all the buildings erected at Athens during this period, was commenced by Pericles in 444 B.C. Standing on the highest part of the Acropolis, this noble temple was dedicated to Athena (called Minerva by the Romans), the tutelary goddess of Athens. Its form was of the utmost simplicity: a parallelogram 227 feet long and 100 feet broad, consisting of a continuous peristyle of columns inclosing the cella, which formed the actual temple. It is of the Doric order, and was erected under the superintendence of the architects Ictinus and Callicrates. The whole edifice was constructed of Pentelic marble, with exception only of the tiles of the roof, which were of Parian.

The temple was adorned with those master-pieces of sculpture executed by or under the immediate control of the sculptor Phidias, many portions of which are now deposited in the British Museum, and known as the Elgin Marbles. These, as must be acknowledged by all who examine them, evince a wonderful power; the human and animal forms being full of life and motion, combined with the utmost gracefulness in composition. They far exceed anything that had existed before that time, and for sculpture possessing such high and intellectual characteristics we may search in vain during all the centuries which have elapsed since the age of Pericles. They therefore remain to us as precious models and examples of the highest class of art; and although one may regret their having been torn from the temple which they adorned, yet possessing them, as we do, we ought to appreciate them as treasures of priceless worth.

The whole of these sculptures had reference either to the goddess Athena, or to the people by whom the temple was erected. They may be divided into three classes:—

1. The statues filling the typanums[2] of the pediments. These consist of figures much above the size of life, and at one end refer to the birth of Athena or Minerva from the head of Zeus (Jupiter), and at the other to the contest between Athena and Poseidon (Neptune) for the soil of Attica.

2. The metopes, or square spaces in the frieze between the triglyphs, which were filled with alto-relievos representing the exploits of the goddess herself and the struggles between the Centaurs and Lapithæ.

3. The frieze or band which ran entirely round the top of the external walls of the cella, sculptured with figures in bas-relief

[1] Chambers's *History of Greece.*

[2] Triangular spaces formed by the slope of the roof at each end of the temple.

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representing the Panathenaic festival, celebrated in honour of Athena, and held once in four years, in the third year of each Olympiad. Many of the figures in the procession are on horseback, others are about to mount; some are in chariots, others on foot. But the chief object of the entire procession is the delivery of the embroidered veil and mysterious baskets into the hands of the reigning archon and a priestess.

These sculptures were, after all, but a portion of the matchless works of Phidias which originally beautified the temple. The acroteria or pedestals on the pediments supported groups of sculptured figures, which, doubtless, were of the greatest excellence; and the temple contained also a statue of the goddess Athena, said to have been one of the greatest works of Phidias, and wrought by his own hands. It was formed of ivory and gold, and was 47 feet high. The interior of the temple was divided into two parts, the inner one containing the statue of the goddess.

Other examples of Doric architecture exist at Athens, none of which, however, are so rich in sculpture as the Parthenon. Of these may be mentioned the Propylæum or entrance to the Acropolis, and the Theseum or Temple of Theseus. The latter, although much smaller, is second only to the Parthenon. It was erected about thirty years before that building, which it resembles in its most essential points.

The Theseum was ornamented with a sparing hand, but the arrangement of the sculpture was so judiciously managed as to produce the greatest possible effect. The ten metopes in front of the eastern portico exhibit the labours of Hercules, while those on the flanks refer to Theseus. The sculptures from the pediment have disappeared. Remains of the painting are in some parts very conspicuous.

Although it was for some time disputed, there is now but little doubt that painting, or what is more correctly termed polychromatic decoration, formed a conspicuous and distinguishing feature in all the Greek temples, and that not only architectural members, but the beautiful and delicate sculpture as well, was elaborately painted and gilded. But as to what the colours were, or what portions were gilded, there is still a considerable difference of opinion; there can be no question, however, that the Greeks used strong and positive colours. In excavating near the Parthenon "there were found many pieces of marble, and among these fragments parts of triglyphs, of fluted columns, and of statues, particularly a female head. These three last-mentioned fragments were painted with the brightest red, blue, and yellow, or rather vermilion, ultramarine, and straw-colour, which last may have faded in the earth. The colours are laid on in thick coats. The female face had the eyes and eyebrows painted."[1] Distinct traces of vermilion, and other colours also, can still be distinguished, although in minute quantities, in some of the examples preserved in the British Museum. As to the forms of the painted enrichments we have clear evidence, as their outlines are frequently indicated on the marble by an incised line engraved by a sharp tool, which was probably done by the aid of stencil-moulds.

It is necessary to explain that the mouldings of the Doric temples were, with very few exceptions, left plain and uncarved, but

[1] Mr. Bracebridge in Wordsworth's *Athens and Attica*.

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were enriched by painting; while, on the contrary, the mouldings of the Ionic temples were elaborately carved as well as painted. Upon the cymatium of the raking cornice of one of the pediments of the Parthenon was discovered a very elegant form of the anthemion ornament,[1] Fig. 56, and probably the fillets above and below it, as well as the plain fascia of the cornice, were covered with fret ornaments. As a rule, plain fillets, bands, fascias, friezes, and the abacuses of capitals were ornamented by what is commonly called the Greek fret or meander—in a simple form on the smaller members, but more elaborate on the larger surfaces. Fig. 57 is a meander from the

Fig. 56.

Fig. 57.

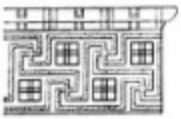

Fig. 58.

fragment of a frieze dug up near the Parthenon, and supposed to have formed a portion of that building. The meander ornament, variously treated, is common on all the other temples, both Doric and Ionic, as well as upon Greek vases and dresses. It was frequently used to enrich the beams that formed the ceilings of the temples, and divided them into square panels or spaces called lacunaria. These were usually painted a bright blue, with gold stars, to indicate the heavens, as in Fig. 58; or they contained combinations of the anthemion ornament, Fig. 59, which is formed of the honeysuckle and lotus. Fig. 60 represents one of the antefixal ornaments which terminated the rolls of the tiles above the cornice at the sides of the Parthenon.

Fig. 59.

Fig. 60.

The Ionic order, which at first was confined to the Ionian states in Asia Minor, is said to be coeval with the Doric. A very simple example of this order existed at Athens, in the small temple which stood on the banks of the Ilissus, but is now destroyed. The richest and the most beautiful example, however, still remains in the triple temple on the Acropolis, called the Erechtheum. It contained the Temple of Erechtheus, the Temple of Athena Polias, and the Temple of Pandrosus. War and other causes hindered the completion of this temple; and an interesting inscription has been found, which contains the particulars of a minute professional survey of the unfinished parts, made shortly after the erection of the building, and conducted under the direction of an architect named Philocles. The date of this temple is supposed to be a little later than that of the Parthenon.

The Erechtheum has three porticoes, two of which are Ionic, very richly decorated, with the anthemion ornament sculptured

[1] Another very similar example is given in Stuart & Revett's *Antiquities of Athens*, from a frieze in the small Ionic temple on the Ilissus.

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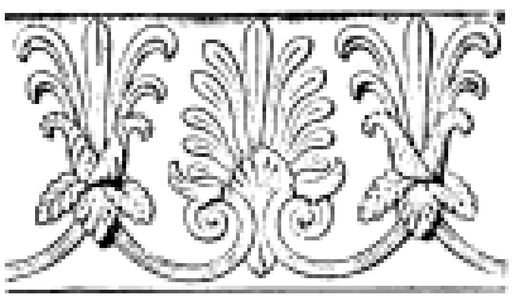
under the volutes of the capitals, and forming a band round the neck of the column, the whole being of extreme delicacy of execution. The same ornament is also used as a continuous frieze under some portions of the entablature. The mouldings of the entablatures, as well as the capitals of the antæ and other parts, are most beautifully carved. Of the remains of these which have been brought to this country, and are now deposited in the British Museum, the late Sir Digby Wyatt said in his Slade lectures, "I may aver without hesitation, that there are no other architectural fragments so beautiful in all the world." Fig. 61 represents one of the

Fig. 61.



friezes or bands from the capitals of the antæ. Fig. 62 is the enrichment from the

Fig. 62.

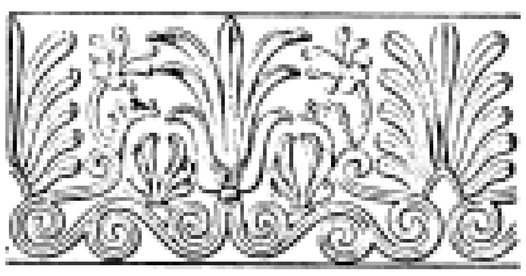
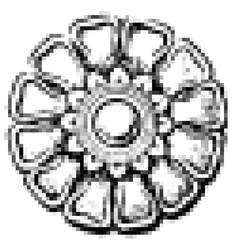


Fig. 63.



cymatium of the great doorway; and Fig. 63, a patera—a form of ornament which is of frequent occurrence in Greek architecture—from the architrave of the same doorway.

The portico of that part of the Erechtheum called the Pandroseum is supported by female figures called Caryatides in lieu of columns. These figures have a kind of architectural cap upon their heads, upon which rests the entablature. With exception of these figures there is no trace of any sculpture having ever existed in any part of the Erechtheum. In the British Museum there is an example of a Caryatide figure, of great elegance and beauty (Fig. 64), which was found near Rome, but is of Greek workmanship of the best period.

Fig. 64.

There are other examples of Ionic temples in Asia Minor, the remains of which show that they must have been of considerable beauty, more especially the Mausoleum at Halicarnassus, the Temple of Diana at Ephesus, and the Temple of Minerva at Priene. Portions of these works have been brought to this country and are now in the British Museum.

Of the Corinthian order there is but one purely Greek example in existence—the small Choragic Monument of Lysicrates at Athens, the workmanship of which is carried to the highest pitch of refinement. This monument is known to have been erected in the year 335 B.C. There is another example of a foliated capital in the Tower of the Winds at Athens, but it cannot strictly be called Corinthian. Although it has been supposed that the Corinthian capital was invented by Callimachus, there cannot be a doubt that it was borrowed in some measure from the bell-shaped capitals of the Egyptians. The capital in the Tower of the Winds appears to be intermediate between the Egyptian and the fully developed Corinthian, from its having no angle volutes.

The Greeks were, apparently, the first

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people who developed the acanthus foliage. Nothing of the same character can be found in any previous style of architecture. It formed the leafage of the Corinthian capital, and as far as we can judge by the small capital from the Monument of Lysicrates, it was of great beauty and elegance. Fig. 65 shows a portion of one of the leaves from the capital. On the roof of the same monument are

Fig. 65.

Fig. 66.

some beautiful scrolls having sheaths of the acanthus foliage. One of these scrolls is given, Fig. 66, from Vulliamy's examples of ornamental sculpture in architecture. The Greek acanthus foliage is of a sharp spiky form, and is supposed to be conventionalized from the plant *Acanthus lanceolatus*.

Similar foliage is to be found in some of the examples of antefixal ornaments which are frequently of terra cotta. It is seen again combined with the honeysuckle upon the *stelæ* or sepulchral monuments of the Greeks, Fig. 67. In all the examples the same character of sharp zigzag outline of the foliage with circular eyes is to be distinguished. It is much to be regretted that so few examples of such elegant foliage have been preserved in Greece. In all probability, when the Romans overran the country they became so enamoured with this species of ornament that they carried with them to Italy many specimens of it, which are now lost for ever.

Fig. 67.

Besides the acanthus the Greeks did not select many natural types for their foliage, and employed even these in a highly conventional manner. They consisted principally of the honeysuckle, of which an example from the roof of the Monument of Lysicrates is given, Fig. 68; the laurel, of which a very beautiful wreath (Fig. 69) is from the Monument of Thrasyllus; the holly, of which Fig. 70 is an example, in a sculptured moulding from the Erechtheum; and the lily or lotus, as seen in the anthemion ornaments.

Fig. 68.

Fig. 69.

But it must be remembered that Greek ornament is considered to be purely æsthetic and ideal, devoid of all symbolical meaning, and that it can be but obscurely traced to

Fig. 70.

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natural types. What is called the "Greek honeysuckle" has but slight resemblance to that flower, and it appears more probable that it is a refinement upon the palm as found in Assyrian sculptures. Again, the acanthus foliage is as likely to have been suggested by the thistle or the sea-holly as by the natural acanthus. The Greeks pursued principles rather than a literal adherence to nature. These principles embraced simplicity and gracefulness of form, symmetry, and repetition. Symmetrical ornaments are found in such examples as Fig. 67; repetition in Figs. 68 and 70, and in the long lines of the echinus or egg-and-tongue moulding (Fig. 71), in the astragal or reel-and-bead, and in the enriched ogee or cyma-reversa.

Fig. 71.

That they sought beauty by simple repetition may be seen from the long vistas of columns in their porticoes and peristyles. But they further understood the value of repetition with variety, as found in their sculptures. In the Panathenaic frieze the long procession of graceful horses and their riders are repeated with regularity but variety. So with the metopes of their entablatures. The triglyphs carry out repetition only, but the sculptures of the metopes add variety. The Parthenon is the highest exemplification of the principle "unity with variety."

The beautiful antique statues and bas-reliefs, of which examples are now preserved in nearly every important public museum of Europe (such as the Apollo Belvedere, the Venus of Milo, and a vast number of others), are for the most part of Greek workmanship, and many of them of the best period. As long as Greece remained free, sculpture retained its high character, but upon the capture of Corinth in 146 B.C. thousands of magnificent works of art were dispersed. Many were sold, while others were sent to Rome. From this period the history of Greece must be sought in that of Rome. Greece became a mere province, and her inhabitants willingly exercised their talents for their new masters.

The most important manufacture of the Greek period of which remains exist, was that of terra-cotta vases, and on these we find all the characteristic ornaments of the best epoch of Greek decoration. These vases, which are commonly termed Etruscan, will be more fully described in the following chapter.

Plate 7.

No. 1. A free adaptation of the anthemion ornament. Many varieties of it are found on Greek vases.

No. 2. The honeysuckle and lotus alternating, but not connected by scroll work, as in the anthemion ornament. The arrangement is after the manner of the Egyptian, from which the Greek ornament was derived.

No. 3 are examples of flower-form ornaments, usually termed paterae, frequently found in Greek architecture. Derived from the Assyrian.

No. 4. A simple form of frieze ornament for painting.

Nos. 5 and 6. Atlantes, given as suggestions for introducing in front of a pier or pilaster to support the entablature above. See also No. 4, Plate 10.

The idea of these male figures, which are sometimes called Telamones or giants, is taken from the temple of Agrigentum, where they are represented supporting the superincumbent weight upon their head and arms.

No. 7. A four-way wave scroll, forming a panel for inlay or painted decoration.

Nos. 8, 9, 10, 11, 12 contain suggestions for meander

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or fret form for gold and colour, alternating with square enrichments containing animal, vegetable, and fish forms. Frets are of constant occurrence in Greek painting. Other variations will be found in Plates 8, 9, 11, and 12.

Plate 8.

No. 1. Frieze enrichment, somewhat after the manner of those from the Erechtheum. See Figs 61 and 62.

No. 2. Anthemion ornament reversed and alternated.

Nos. 3 to 10. Various suggestions for narrow band enrichments, in character similar to those found on Greek vases.

No. 11. Trident forms of enrichment for coloured decoration.

No. 12. Heart-form enrichment; arranged in a circle for colour on a gold ground.

No. 13. Honeysuckle and scroll enrichment issuing from an acanthus leaf.

No. 14. Circle containing chimera treading upon a snake, with a border formed of the wave ornament.

Plate 9.

No. 1. Disk containing the heads of the Fates.

Nos. 2 and 3. Heads of Minerva with borders of bud forms.

Nos. 4 and 5. Continuous ivy enrichments, as found on Greek vases.

No. 6. Altar with Pan and Bacchante.

No. 7 and 8. Circles containing a vase with foliage, also ivy, vine, grapes, and laurel, similar to examples found on vases.

No. 9. Fret band.

Nos. 10 and 11. Diagonal foliated enrichments for borders.

No. 12. The honeysuckle and lotus, with flowers and scroll work, but having an Assyrian or archaic Greek character.

Plate 10.

No. 1. Honeysuckle and lotus with pateræ.

Nos. 2 and 3. Enrichments after the manner of the antefixal ornaments which formed the finish of the roof tiles on temples.

No. 4. Telamon supporting a frieze enriched by the echinus or egg-and-tongue ornament.

Nos. 5 and 6. Wave-line honeysuckle and ivy ornaments, after the manner of those found on Greek vases.

No. 7. Double or reversed lotus ornament.

No. 8. A variation upon the anthemion ornament.

Nos. 9, 10, and 11. Leaf ornaments, for painting in the style of the Greek vases.

Plate 11.

No. 1. Centre leaf ornament, the two sides varied.

No. 2 and 3. Ivy-leaf ornaments.

No. 4. Leaf border with tendrils.

No. 5. Honeysuckle and scroll: panel-painting, blue on gold ground.

No. 6. Marble inlay for pavement or wall decoration.

No. 7. Meander fret border, with angle ornament for a ceiling, in colour or low relief.

Nos. 8, 9, 10, and 11. Continuous leaf ornaments for narrow bands or borders.

Nos. 12, 13, 14, 15, 17, and 18. Border enrichments of various design, for painting or inlay.

No. 16. One portion of continuous leaf or flower enrichment.

Plate 12.

No. 1. Brush-formed ornament, with inclosing lines.

No. 2. Honeysuckle centre, with flowing scrolls and leafage for painting.

No. 3. Centre enrichment, with line interlaced scrolls and honeysuckles.

No. 4. Painted panel. Goddess on a winged wheel, with meander border.

No. 5. Heart-form scroll and honeysuckle border.

No. 6. Frieze or border, with enriched panels and fretwork.

No. 7. Hanging honeysuckle ornament.

No. 8. Honeysuckle within heart-form, with branching scrolls and leafage, after the manner of foliage frequently found on the Greek vases.

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CHAPTER VII.

ETRUSCAN ORNAMENTATION.

ETRURIA, the modern Tuscany, was a large and important country in Central Italy. Its colonization and early history are involved in much uncertainty. It is supposed by some, that the Etruscans emigrated from Lydia in Asia Minor at a period long before the Christian era, and that they carried with them the germs of Greek art. They appear to have made early progress in the art of working bronze and the precious metals, but more especially in the production of beautiful pottery ware, seen in the elegant vases found so plentifully in various parts of the country. Many thousands of these vases were discovered in the year 1829; about three thousand being excavated from the site of Vulci alone. They were found in small grotto tombs, sometimes built, but usually hollowed out of the rocks, and are of various styles and periods of art. Some writers, notwithstanding the fact of there being Greek inscriptions upon many of the vases, claim them as purely Etruscan works; while others assert that they were imported from Greece. The difficulty, however, of transporting them in such numbers, in consequence of their extreme fragility, renders it more probable that the potters themselves rather than their products were imported. Potteries producing works of the highest style of art existed at Athens and Corinth, and as it is well known that Etruria received fresh infusions of Greek blood at various times, it may be assumed that among these colonists were potters and artists, who brought with them the necessary skill for fabricating and painting these beautiful objects. From the vast numbers found, these vases had evidently been for a long period in great demand among the Etruscans, and this circumstance would doubtless attract fictile artists from Athens and other places throughout Greece. Although popularly known as Etruscan, these vases may therefore be considered of Greek workmanship, and in fact many vases in similar styles have been found in Athens, Corinth, Sicily, Samos, and other Greek islands.

The ceramic arts are among the earliest practised by mankind: works in burned earth or terra cotta are found in Egypt, and in many parts of the habitable globe, but nowhere more plentifully than in Asia Minor and the various states of Greece. Although the Egyptians never attained to any high degree of excellence in this art, yet the use of such vessels among them was universal. The celebrated flesh-pots of Egypt were of terra cotta, and for many purposes for which iron is now used, clay was in use during the time of the Pharaohs.

The ancient potter's wheel was of very simple contrivance, and was turned by the foot of the workman himself; yet the

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excellence of the work produced by it was marvellous. Some of the vases, not to speak of their exquisite forms, were nearly as thin as writing paper.

The ornaments on Greek archaic vases consist mostly of concentric circles, spiral and herring-bone lines, as well as meanders, wave scrolls, chequers, zigzags, and other simple forms. Among other figures Dr Schliemann found the Trojan terra cottas[1] covered with a species of cross which he calls a "suastika" (see Fig 55). The suastika in more perfect vases of the early Greek period is found further developed into the form shown by Fig. 72, and this may not improbably have been the origin of the Greek fret or meander. These ornaments were diversified by the introduction of the forms of flowers, animals, and insects, all drawn with the childish simplicity of early art, and they may be considered as belonging to the heroic or early age of Greek art.

Fig. 72.

The later and more perfect Greek, or as they are popularly called Etruscan vases, are enriched by the introduction of figures and animals of a much higher and more artistic character, and some of the more recent of them are elaborately decorated with that highly aesthetic skill for which Greek workmanship is so justly valued.

These vases may be roughly divided into two classes:—The first having black figures and ornaments on a red ground, the natural colour of the clay, as in the examples shown by Figs. 73 and 74; the second with the figures left of the natural colour and the ground painted black, as shown by Figs. 75, 76, and 77. In the former class, the figures are in silhouette with incised lines, but in the latter the various parts of the figure and the drapery are drawn with a black or brown line. The earliest class, that is, black on red, belongs to a date about 600 B.C.; the second may be reckoned to be about a century later, and extended over a period of about 300 or 350 years, when the manufacture seems to have ceased. During this long period, as may be supposed, considerable variation took place in the style of enrichment and also in the forms of the vases. The later productions were more covered with figures and ornament, and were much less severe in style, than the earlier. Other colours besides the primitive ones of black and red, and also gold, were frequently made use of upon the later vases.

Fig. 73.

Fig. 74.

Fig. 75.

Fig. 76.

Fig. 77.

The painting appears to have been done after the vase was dried in the sun. It was then covered with a fine siliceous glaze, and sent to the furnace to be carefully baked.

[1] See *Troy and its Remains*, by Dr. Henry Schliemann, edited by P. Smith.

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Afterwards it was returned to the workshop, where a workman or painter with a pointed tool scratched in the details, when the decorations were black. But it is evident that these stiff lines were quite inadequate to express those softer contours, which melted, as it were, into one another, and which marked the more refined grace and freedom of the rapidly advancing schools of sculpture and painting. By changing the colour of the figures to red or orange, according to the nature of the clay, the artist was enabled to draw lines of a tone or tint scarcely darker than the clay itself, but still sufficient to express all the fine anatomical details; while the more important outlines still continued to be marked with a black line finely drawn. The change was produced by tracing the figures on the clay with a fine point, and then working in the whole ground in black.

The subjects represented upon the vases relate most frequently to heroic personages, such as Jason, Achilles, Hercules, and others belonging to Greek mythology; but many scenes are of a more ordinary and even of a domestic character. Thus some represent the chase, the public games, women drawing water at a fountain, or employed in their indoor occupations.

The figures are generally drawn in profile, full faces being very rare. Temples also are occasionally introduced, with Doric or Ionic columns. Many of the dresses are diapered or bordered with ornament, and armour and altars are of frequent occurrence, as well as furniture, such as chairs, upon which some of the figures are seated. Many curious particulars may be learned from these vase pictures, in reference to the Hellenic ritual, games, festivities, and domestic life; and there are representations of many products, instruments, and processes in the mechanical arts.

Besides figures and similar subjects, Etruscan vases were also very elegantly enriched by bands of beautiful foliage, formed with spirals and honeysuckles of the most varied description, of which an example is given in Fig. 78. These enrichments are full of the most valuable suggestions to the ornamentist. They bear great similarity to the decorations found in Greek architecture, and many of the bands contain some beautiful variations upon the Greek anthemion ornament — one of which is indicated by Fig. 79. Frequently more natural foliage is introduced, as in Fig. 80, which represents the berries of the ivy alternating with the plain leaves of the ivy, which in nature are always found of this undivided form when on the same stem which bears the flowers and berries. The Greek egg-and-tongue or echinus ornament, Figs. 81 and 82, is commonly introduced very skilfully varied, from the more rigid sculptured form. Upon the

Fig. 78.

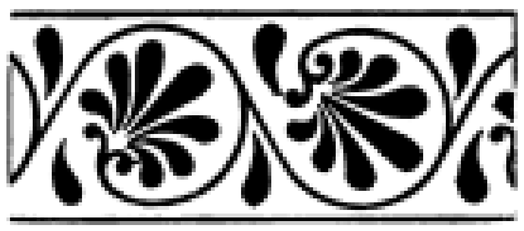

Fig. 79.

Fig. 80.

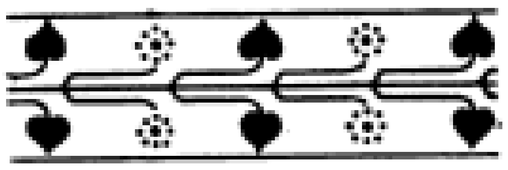

Fig. 81.

Fig. 82.

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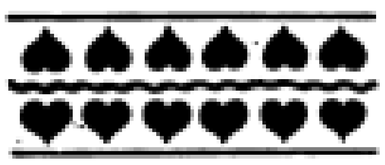
handles of many of the vases a heart form or leaf enrichment with a central stem is of constant occurrence, Fig. 83. The meander, with flowers or crosses at intervals, almost invariably occurs as a band round the vase under the feet of the figures, as if to represent the ground.

Fig. 83.



Other characteristic ornaments are an olive-leaf band (Fig. 84), and a leaf or bud with interlacing semicircles, as in Fig. 85. This last is again further varied, as in Fig. 86, which may also be considered as another variation of the anthemion ornament. There are besides a vast variety of the most elegant arrangements of Greek leaf and scroll form to be found upon these vases, and the large collection of them which is now in the British Museum presents endless examples for the purposes of study. They all appear to have been painted by hand, and the lobes of the leaves and flowers, when in black, are evidently produced rapidly by a species of brush form united and brought together with the utmost grace and elegance. When, however, the ornament is left in red, as is so frequently the case in the second class of vase, the process is much more difficult, and the skill required is proportionately greater. The painter has then to go round the leaves and scrolls, leaving them of the colour of the ground, as in Fig. 84. Even such elaborate enrichments as that shown by Fig. 79 are frequently left in red and the ground filled in black. Although the artist was doubtless assisted by a tracing upon the clay, yet the care and skilful handling required to stop-out the ground and leave the ornament in red must have been very great.

Fig. 84.

Fig. 85.

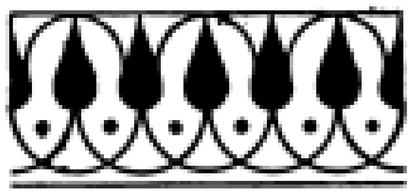
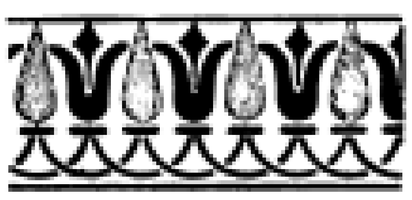


Fig. 86.



The forms which these vases present is another element of beauty, and an interesting and valuable study to the art-workman, but into this subject it is impossible to enter within the limits of the present work. The names of only a few of the different kinds show the variety which existed among them: as the *hydria*, for water; the *amphora*, for wine; the *krater* and *oxybapha*, large vases with two handles; and the *oinochoè*, or wine jug. The *lekythos* is an elegant form of upright vase, as shown by Figs. 73 and 74; the *situla* or bucket, Fig. 75; and the *kylix*, Fig. 76, of which Fig. 77 shows the top or inside. These forms were modified and altered during the long period of time the manufacture lasted, and in some of the later vases the figures and enrichments were executed in relief.

The Etruscans were also skilful workers in metal. Besides fictile vases, great quantities of bronze work and jewelry of the very highest degree of excellence have been discovered in the excavations. The smaller works in pure gold consist of diadems and coronets set with intaglios and precious stones; also hair-pins, earrings, collars, necklaces, bracelets, rings, and other objects, all worked with such perfection, extraordinary lightness, and delicacy, that they leave far behind all modern examples of the jeweller's art. Armour and weapons, and many instruments requiring a fine edge, such

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as razors, saws, and other tools, were made of bronze, which seems to have combined tensile strength, hardness, and elasticity in a remarkable degree, far surpassing the modern metal which we call bronze. Their bronze candelabra were eagerly sought after both by the Greeks and Romans. Mirrors, also, have been discovered in great numbers, formed of thin plates of bronze, one side of which was sufficiently polished to reflect objects. Most of these are circular disks with a handle attached to them, and on the back of the disk a design is incised in outline, representing generally some mythological subject, encircled by an ornamental border.

Vases were sometimes made of bronze, and were often enriched with beautifully wrought figures, and handles of scroll-work arranged with great elegance.

Plate 13.

Nos. 1 and 2. Heads and foliage, after the manner of a more free and careless brush form, evidently done with great rapidity, such as is sometimes found on the later vases. Some of the scrolls were painted in white.

No. 3. Mirror frame with a foliated border in engraved metal work. In the centre a flower for jewelry, with horned head and pendants varied.

No. 4. Border enrichment form, with egg-and-fan or honeysuckle, for sculpture in low relief.

No. 5. Convolvulus ornament, with leafage of a more natural type, for engraved metal work.

No. 6. Border ornament, consisting of lotus and honeysuckle transposed alternately.

No. 7. Cup-and-fan ornament or lily interlaced, for a band or frieze.

No. 8. Suggestion for sculpture. Cupid stringing his bow.

Nos. 9 and 10. Fan and bud ornaments for bronze work in low relief.

No. 11. Cock for flat painting on crackled gold ground, and border with scroll and honeysuckles. The corner ornaments varied.

CHAPTER VIII

POMPEIAN ORNAMENTATION.

DURING the reign of the Emperor Titus, in the year A.D. 79, the ancient cities of Herculaneum, Pompeii, and Stabiæ were buried by an eruption of Mount Vesuvius, and lay concealed for some sixteen centuries, until their names had become forgotten and their sites unknown. At length, in 1689, during some excavations, the site of Pompeii was discovered, but the discovery created little interest, and no further research was made until 1750, many years after the discovery of Herculaneum. Pompeii was destroyed by repeated showers of ashes and fragments of pumice stone, until the superincumbent mass is now about 20 feet in thickness. The nearness of Herculaneum to Vesuvius made it the first to suffer, and the bed of ejected materials under which it was buried became deeper and more compact. The

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torrents of volcanic mud that filled the latter city hardened into a coarse stone, and subsequent eruptions had covered it to a depth varying from 70 to 112 feet.

In 1711, whilst sinking a well, the site of Herculaneum was accidentally come upon. Its existence was so little dreamed of that a modern village had been erected above its buried remains. Marble columns and statues of surpassing beauty were brought to light by the aid of the well which had been dug, but the Neapolitan government interfered, and for nearly thirty years operations were suspended. In 1738, however, the Marquis Venuti was appointed superintendent of the excavations, and he commenced by carrying on a kind of tunnel from the old well. In a short time two bronze equestrian statues were found, and soon after three full-length marble figures, with massive piers of brick, plastered with stucco, and painted with arabesques in various colours. The excavators had now reached the interior of the theatre, as the numerous steps and seats clearly indicated. The ancient name of the city was found on a pedestal, and the certainty that these remains formed part of the buried Herculaneum is said to have materially increased the energy of the explorers. Vast numbers of wall pictures, statues, and other works of art were brought to light.

But the difficulty of proceeding with the excavations at Herculaneum in consequence of the hardness of the material, the great depth at which they had to be carried on, and the crowded habitations which existed above, compelled the government to abandon them and turn their attention more particularly to Pompeii. In 1750 the disentombment of this wonderful city was commenced, and since then the work has proceeded with more or less interruption. The Italian government now grants a sum of money annually for the prosecution of the excavations, and a regular plan has been adopted, by which the ruins are systematically explored and carefully preserved. Up to the present day, the general result of discovery may be stated as follows:—Three forums, nine temples, a basilica, the Chalcidicum (probably employed as an exchange), three piazzas, two theatres, an amphitheatre, a prison, double baths, nearly one hundred houses and shops, several villas, town walls, eight gates, and twelve tombs. All were as fresh when discovered, and the paintings on the walls as bright, as if they had been buried but yesterday. The abundance of works of art and means of luxury found in this ancient provincial city of some thirty thousand inhabitants, affords us a vivid idea of the splendour of Italian cities under the Empire.

The houses of Pompeii illustrate in a remarkable degree much of the private life and manners of their ancient occupiers. The principal divisions of a Pompeian house consisted of three square chambers, leading one into the other; the first and last of these were lighted each by a square opening in the ceiling open to the sky, but the central apartment was only lighted from the rooms on either side. There was no division between the apartments, beyond that made by curtains, by which the light from the other rooms could be regulated at pleasure. The first room, which was generally the largest, was called the *atrium*, and had a square tank or basin in the middle of the floor, to collect the water dropping from the roof and receive the rain falling through the

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opening. This arrangement for the free descent of rain afforded two essential luxuries to the inhabitants of a southern climate—shade and moisture. In a country like our own it is scarcely possible to estimate their value.

The accompanying illustration, Fig. 87, is a restored interior view of the house which has been named "the house of the Tragic Poet." It shows the three apartments spoken of: first, the *atrium*, out of which opens the *tablinum*, the central apartment, through which is seen the *peristylium*, so called because surrounded by columns. This had a larger aperture open to the sky than the atrium, and the open space below was laid out with plants like a garden. The atrium was generally surrounded by smaller rooms, called *cubicula* or bedrooms; and the square of the atrium was broken by the

Fig. 87.—House of the Tragic Poet (so called), Pompeii.

further part being widened into *alæ* or wings. The tablinum was narrowed by a partition, which took off a side passage, called *fauces*, through which the servants passed from one end of the house to the other without disturbing the occupants of the middle chamber. On one side of the peristyle was the *triclinium* or dining room, and on the other the *culina* or kitchen. There were also rooms for slaves, generally, in a story above.

As in our modern houses, the proportions varied according to the fancy of the owner or the limitations of space. Some had a greater number of apartments, others a double set; but in all well-constructed houses, whatever the rank of the owner, the atrium, tablinum, and peristylium remain the essential portions. In the atrium the owner of the house received his clients and friends, transacted business, and was waited upon by his slaves. It was only in the tablinum that he could indulge in privacy.

The style of the buildings and decorations which have been discovered may be correctly distinguished as being of late or debased Greek, with a frequent admixture of Roman; it is sometimes called Græco-Roman, and there cannot be a doubt but that Greek

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or Etruscan artists, both sculptors and painters, were very largely employed by the Pompeians. The architectural details, however, were carelessly and ungracefully designed. These artists did not depend so much upon form for effect as upon colour. The whole of the architecture of Pompeian houses was coloured and decorated, and the walls covered with paintings and arabesque designs. The painters therefore depended principally upon the fanciful manner in which these decorations were worked out.

Fig. 88.

They appear to have delighted in representing every form of architectural detail in the lightest and most graceful manner, often in perspective, Fig. 88. Scroll-work of the

Fig. 89.

brightest hues, with every variety of ornamental conceit, were brought together (Fig. 89), but their playfulness and elegance relieved them from vulgarity. Paintings were often enriched by fanciful borders (Fig. 90); floors were inlaid with elaborate mosaics, and the borders with meanders and other devices shaded in colours (Fig. 91).

The decoration in many instances was evidently executed with a marked Greek feeling, as indicated by Fig. 90, and had a pleasing and chaste character. It was composed for the most part of conventional ornaments in flat tints,

Fig. 90.

Fig. 91.

either painted dark on a light ground, or light on a dark ground, but without any attempt at shade or being represented in relief. In contrast to this, however, much of it was in a very different style,—shaded and coloured in the most fantastic and capricious manner. Of this style, Fig. 89, represented in outline, presents an example. This is clearly of a Roman character, and was based upon the acanthus scroll, frequently interwoven with ornament in direct imitation of nature. Again, in many of the floor mosaics, representations of raised surface, as in Fig. 91, were of constant occurrence.

That the Pompeians highly prized Greek art is evident from the number of Greek bronzes that have been found among the ruins of the city. Among these the bronze candelabra are very elegant, with Greek foliage, gracefully introduced between the tripod legs; and they are precisely the same in style and character as the numerous examples which have been discovered in Etruria.

Some visitors to Pompeii may be struck with the intensity and crudeness of the colours on the walls, but this was to some extent toned down by the amount of shade in which the rooms were kept. In hot countries the exclusion of light and heat from the rooms in the daytime is a necessity, and the brightness of the colours is therefore

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much lessened on account of the sombre light in which they are usually seen. In all the variation of colour on Pompeian interiors there is one pervading principle, namely, that the strongest and darkest colours are confined to the lower part of the wall. Thus if the dado be black, the upper part will be red or yellow, and the ceiling white; if the dado be red, the rest of the wall will be yellow or blue; and if the dado be yellow, all the rest of the room will be white.

The arabesque devices, which occupy so much of the wall space of Pompeii, are replete with imagination and ingenious variety. There is so much playfulness and elegance in the combination of objects so unexpectedly brought together, that the incongruities are overlooked, and the whole comes to be regarded as a dreamlike succession of images, passing easily from one extreme to the other without consideration of that which has gone before. The children rising out of flowers are charming; while the lions rushing through scroll-work of the brightest and most varied hues are purely ornamental conceits. The whole style of decoration constantly exhibits indiscriminate extravagance, and a recklessness as to cost or expenditure of labour, and plainly indicates the luxury and magnificence in which dwelt the proud and wealthy inhabitants of this ancient Roman city.

PLATE 14.

No. 1. Painted arabesque for narrow panel.

No. 2. Grotesque panel painted in relief. All kinds of animals, monsters, and children were thus introduced in the most incongruous manner.

No. 3. Wall decoration, painted in the brightest hues, with arabesque borders varied, the centre in perspective as if seen through an opening.

No. 4. Arabesque pilaster or filling for panel.

Nos. 5 and 7. Painted borders.

No. 6. Dolphin brought in with scroll-work. Griffins and many other animals were often most playfully intermingled with the foliage.

CHAPTER IX.

ROMAN ORNAMENTATION.

ANCIENT Roman architecture is in style so largely borrowed from the Greek, that it cannot strictly be considered a separate style, for its variations are mainly those of detail and arrangement. In Greek and Roman architecture there are the same orders—the Doric, Ionic, and Corinthian. The two orders that the Romans are supposed to have added cannot truly be called separate orders, the Tuscan being simply a variation of the Doric, and the Composite a mixture of the Ionic and Corinthian. The Corinthian was the order that was most in favour with the Romans, and it was the style adopted for some of their largest and most important temples, as well as for many of their triumphal arches.

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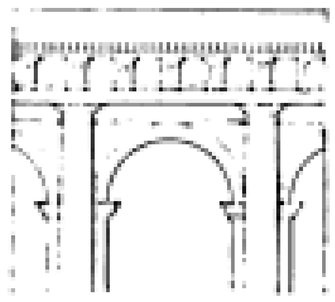
The Corinthian capital was made far more perfect than any Greek example of that order which has been handed down to us, and the entablature was most elaborately enriched by foliated sculpture. In effecting these alterations and improvements the Romans availed themselves greatly of the exquisite talent of the Greeks, by inviting many of the artists of Greece to reside among them, and by intrusting to them all their most important buildings. Such was the admiration of the Romans for Greek art, that they sought for it wherever it was to be obtained; and upon the conquest of Greece they brought away many of the most beautiful works of sculpture and set them up in Rome. The statues of the Apollo Belvedere, the Venus de Medicis, and many other highly-prized antiques are Greek works, and were probably executed at the time of Greece's greatest prosperity.

The Romans also greatly extended the use of the orders, by applying them not only to temples, but to basilicas, theatres and amphitheatres, baths, palaces, tombs, triumphal arches and pillars of victory, gates, bridges, and aqueducts. Although not the original inventors of the arch, they employed it extensively in their architecture, a feature that was never adopted by the Greeks, although its form was known to them at a very early period. One of the few instances of the arch or domical form being used by the Greeks is found in the Treasury of Atreus at Mycenæ. The joints of the stonework, however, do not radiate with the curve, as in a true arch, but are kept horizontal, forming a series of corbellings with the underside worked to the form of an arch. Although undoubted instances of the true arch have been found among the works of the Egyptians, as well as in those of the Assyrians, such as have been discovered at Nimroud and Khorsabâd, yet apparently, the *principle* of the arch was unknown to the Greeks.

The arch was frequently applied by the Romans in a somewhat inferior position—that of filling in between columns, which were set rather wide apart, and made to support an entablature, Fig. 92. It was used in this manner in the triumphal arches, theatres, and other buildings. Afterwards the arch was placed above the entablature, but the entablature was discontinued between the columns, and retained only immediately above the capitals. Although the entablature was omitted in some cases in the palace of Diocletian at Spalatro, it was not until the Romanesque period that it disappeared entirely, and that the arch was made to spring immediately from the capitals of the columns.

Fig. 92.



The most important use of the arch, however, was its application to vaults and domes. As exemplifying the perfection attained by the Romans in such construction, the Pantheon is one of the most interesting buildings of antiquity. It is covered by a hemispherical stone dome, which has an internal diameter of 139 feet, and is the earliest of any great size in existence. The dome springs from a height of 75 feet above the ground, and has a circular opening at top, 27 feet in diameter, for lighting the building.

Of vaults, as developed by the Romans, the Basilica of Maxentius (sometimes called the Temple of Peace) offers a good example. The plan is a parallelogram divided into

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nave and aisles. The nave was vaulted with intersecting cross vaults, forming three semicircular groins supported on columns which were 83 feet apart. The height of the vaulting from the pavement was about 116 feet. The aisles were roofed by three transverse arches, which were each 72 feet in span. The arch was also used extensively by the Romans in their aqueducts; and nothing impresses the traveller more than these structures, stretching as they do across the Campagna in long lines of arches, often of two stories. Although formed simply in brick, and devoid of all architectural pretension, yet they are among the most beautiful examples of Roman skill. Their bridges likewise were designed on a grand scale. The one built by the Emperor Trajan over the Danube has piers which are said to be 150 feet in height from the foundations, and twenty arches each 170 feet span.

It was this remarkable skill of the Romans in the engineering treatment of the arch which enabled them to invent that new system of vaulting, which when developed into groins and domes formed one of the grandest improvements in the constructive and scientific application of stone that had ever before taken place. This invention was destined, in later styles, to lead to the happiest results,—to the conception and construction of the magnificent domes of the Byzantine and Renaissance periods, and to the intricate and fairy-like groining of the Gothic cathedral. It caused a complete and extraordinary revolution in architecture, and through the pointed arch being at length adopted in place of the semicircular it became the origin and mainspring of all the mediæval styles.

By these great works, handed down to those who followed them, the Romans have successfully shown their wonderful ability in construction. In whatever part of the world the remains of their works are to be found, their profound skill in the use of materials is a marked feature. There cannot be a doubt but that their engineering skill was equally manifested in the use of wood, for we read of bridges of remarkable dimensions having been erected of that material, although from its perishable nature it is not to be expected that any of them should still exist.

Their ornamental details and architectural sculpture, however, are not of the same high character as their construction. For these portions they employed Greek artists, who have left us examples which present the utmost skill in workmanship and the most elaborate fulness or intricacy of detail. We cannot but admire these works and examine them with wonder; but they do not impress us with that intense sense of the beautiful, which we so much appreciate in the more simple and less elaborate enrichments of the ancient Greeks. In the Roman sculptures there is a softness and, as it were, a voluptuous magnificence, but there does not exist that crispness of form and delicacy of line with which we are so struck in the exquisite works of Phidias.

Their Corinthian capitals were wonderfully elaborated. That from the Temple of Jupiter Stator at Rome (Fig. 93) was perhaps the most richly foliated example which has ever existed; but the height at which it was placed must have concealed much of its delicate workmanship. The foliage is said to have been taken from the *Acanthus mollis*, but it has very little likeness to any natural

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type. Sir William Chambers says that almost all the antique Corinthian capitals at Rome are enriched with olive leaves; the acanthus being seldom employed but in the Composite. But as the olive leaf is a simple plain leaf like that of the laurel, and not divided into separate parts as in the Corinthian leaf (Fig. 94, which is from one of the capitals of the Pantheon), it only amounts to the points of each lobe being similar to the terminal half of the olive leaf. Nor do the leaves of the Composite bear any closer resemblance to the acanthus. Fig. 95 represents a portion of a leaf from one of the Composite capitals in the Arch of Septimus Severus; but as it is said that parsley was sometimes used as a model, this must be one of the examples meant, for the mode of division in these leaves is much the same as in the natural leaf of the parsley, and it is not at all similar to that of the acanthus.

Fig. 93.

Fig. 94.

Fig. 95.

The cornices in Corinthian entablatures were highly enriched (Figs. 96, 97, which represent a section and front view), and no part was left plain as in the Greek. Mouldings and fascias were richly foliated (Figs. 98, 99), and friezes were filled with foliage and figures, Fig. 100. This example also serves to show the elaborate nature of the foliage, which was again different from that which was adopted in the capitals.

Fig. 96.

Fig. 97.

Another mode of enriching friezes was by representations of the skulls of oxen, supposed to be the heads of those sacrificed to the gods, with festoons of flowers and fruit suspended from their horns by ribbons, Fig. 101. Many of the Roman friezes were of the most elaborate and intricate workmanship, of which some few fragments have been handed down to us, executed in the most delicate manner. They exhibit great fancy and playful imagination, containing

Fig. 98.

Fig. 99.

Fig. 100.

Fig. 101.

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frequently figures, animals, birds, insects, and other objects.

In their houses, baths, and public buildings, the Romans were extremely fond of mosaic pavements, many fine examples of which occur at Pompeii and in the baths of Caracalla at Rome. Indeed, scarcely a house of any size at Pompeii was without some kind of tesselated pavement; and wherever Roman colonization extended we find traces of such pavements.

In the enrichment of the earlier Roman works, Greek taste prevailed until about the time of Alexander. From this period elaboration and abundance of ornament supplanted the more refined style of art. Carving of surface, as in friezes and mouldings, became universal; foliage was made intricate in outline, and its surface carving was so exaggerated that although extreme fulness and richness were thereby gained, it was invariably at the sacrifice of simplicity and beauty of form. Scrolls grew out of each other, as in the Greek, but the foliated sheaths became long, and formed into a number of divisions and subdivisions, often ending in an elaborate centre flower. The sharp and crisp forms of the Greek foliage became lost in the imitation of obtusely pointed or round-lobed leaves,—more like the leaves of the Chrysanthemum than any other form of natural leaf.

The frequent introduction of animals and monsters, such as the sphinx, the triton, the griffin, often with their extremities passing into foliage, is a marked and distinguishing feature of the Roman style. Ornamental vases and tazzas of great size, executed in the finest marble, enriched with foliage, and frequently surrounded with bacchanalian processions,—marble state chairs, seats, baths, altars, sarcophagi, and candelabra, covered by ornamentation, or supported on griffins,—indicate to some extent the luxuriousness of the Roman citizens of high rank and their love of magnificence. We may fairly assume that the houses of Pompeii, although adorned with sumptuousness, fell far short of the splendour, boundless wealth, and richness in marbles and works of art which must have been found in many of the palaces of imperial Rome. Besides their rich architectural features and tesselated floors, wall paintings doubtless everywhere adorned their interiors, rendering them dwellings of the utmost luxuriance. The few examples of wall paintings which have come down to us from the public baths, show them to have been of very similar character to those discovered at Pompeii.

Plate 15.

Nos. 1 and 2. Animals, monsters, and various chimeræ were commonly introduced by the Romans among their carvings, such as sea-horses, No. 1; or griffins with their extremities running off into scroll foliage, as in No. 2.

Nos. 3 and 4. What are called *termini* are characteristic features in Roman decoration and furniture. The *terminus* or terminal was a form commencing with a head, and sometimes shoulders, finishing with feet, with claws, or with a plinth at bottom, the intermediate space being filled with a square portion tapering downwards. No. 3 is a terminal emblematical of Bacchus, filled in with the thyrsus and grape vine; No. 4, indicative of the god Mercury upon the globe, with cap and wings attached to the head and wings to the feet, the centre being filled with the caduceus or wand of Mercury.

Nos. 5 and 6. Comic and tragic masks. The Greeks and Romans usually wore masks in their theatrical performances, hence masks are often found used as ornaments.

No. 7. We have not many examples of Roman wall paintings; but there can be little doubt that their rooms were decorated by painting of the most

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elegant description. No. 7 represents an ornamental fountain of fanciful design, such as may have been used for a panel in wall decoration, or might be suitable for carving in low relief.

Nos. 8 and 9 are ornaments arranged after the manner of masks.

Plate 16.

Nos. 1 and 2. Female head flanked with monsters. No. 1, lion winged with bird's claws; No. 2, bird with animal's hind legs. For carving in low relief.

Nos. 3 and 4. Rings in bronze for gates. The one represents the head of a satyr, the other a conventional lion's head.

Nos. 5 and 6. Running ornaments for painting. No. 5, a variation of the egg-and-tongue; and No. 6 after the type of the Greek anthemion ornament.

No. 7. A double-bodied sphinx supporting a pedestal carrying a lamp, flanked by sitting female figures representing Industry and Law, with a back-ground formed by the rays of the rising sun. Applicable to wall decoration in painting or low relief.

Nos. 8 and 9. Painted or inlay ornaments for pilasters or upright panels.

Nos. 10 and 11. Terminal angles of altars. No. 10, winged lion and foot, with shaft of column with twisted flute and foliated base. No. 11, griffin's head terminating in a horse's hoof.

No. 12. Female terminal figure in the centre, from the base of which springs foliated scroll-work, carrying flower-baskets. For painted decoration.

Plate 17.

Nos. 1, 4, 5, 6, 7, 9, and 10 are ornaments more after the Etruscan manner, but such as may reasonably be supposed to have been used in their painted decoration by the Romans, who frequently employed Etruscan artists in their house decoration.

No. 1. Foliated ornament for cresting or border.

No. 2. Ornament formed upon the honeysuckle, and with acanthus foliage.

No. 3. Ornamental fluting for columns or for carving in wood-work for a dado or other purpose.

Nos. 4, 5, 6, and 7. Upright running ornaments for painting, containing branching foliage and flowers; leaf and berries, upon a wave line; a variation upon the Vitruvian scroll, with the reel and bead; and ivy with berries.

No. 8. Fanciful mask of Neptune with beard worked into dolphins and trident: eyebrows and hair formed of sea-weed and earrings of escallop shells.

Nos. 9, 10, 11, and 12. Ornaments or borders for inlay or painting.

No. 13. Surface decoration in relief.

No. 14. Bracket formed with African elephant's head at the angle; the centre flower and festoons interlacing with the animal's trunk.

No. 15. Tablet with pendant, buffalo or ox's skull with swag of fruit and flowers. The ox's skull was frequently used in Roman ornament and decoration. See Fig. 101.

Plate 18.

Nos. 1, 2, and 3. Medallions. No. 1, head with dolphin helmet; No. 2, the triumph of Love; No. 3, Romulus and Remus suckled by the wolf, emblematical of the foundation of Rome.

No. 4. Terminal composition for a base, suitable for sculpture.

Nos. 5 and 6. Acorn and grape batons.

No. 7. Ornament in the form of a horn, with foliations springing from a boar's head.

No. 8. Central composition of swans and foliage, suitable for carving.

No. 9. Bracket supporting statuette of a Bacchante flanked with scrolls.

Nos. 10 and 11. Grotesque centre. Comic mask with side scrolls, supporting (10) conventional eagle with foliated wings, and (11) conventional winged panther.

Plate 19.

Nos. 1 and 2. Roman altar or pedestal with shield of Minerva in the centre, containing the head of Medusa, the Gorgon, supported by a cupid. The left side finished with a fluted pilaster and foliated frieze panel, with a terminal figure in profile; the right-hand side pilaster panelled and filled in with interlacing vine foliage with grapes and birds. Ram's head terminal in profile.

Nos. 3 and 4. Grotesque lion and ram's heads, for application to ornamental purposes.

No. 5. Cupid with foliated termination carrying a basket.

No. 6. Panel in relief: the head of the Gorgon Medusa, and claws of harpy.

No. 7. Trophy with heads of Hercules, Ajax, and Agamemnon, accompanied by lion's skin and clubs arranged ornamentally.

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No. 8. Angle terminal.

No. 9. Centre terminal. Convolvulus, horse-shoe and hoofs.

No. 10. Dolphin terminal or angle of pedestal.

No. 11. Angle of pedestal flanked by cornucopia, the ever-fruitful horn of Amalthea. The angle filled with reaping-hook and corn.

No. 12. Border formed of spiral line and convolvulus bell.

Plate 20.

No. 1. Ornamental composition in bas-relief, containing boy in vase with two cupids, scroll-work, and ram's head.

Nos. 2 and 3. Ornamental vase with varied sides for carving.

No. 4. Frieze in bas-relief, with boys as warriors, cupids, birds, animals, and reptiles, among the foliage.

No. 5. Fret inlay for wood panelling or marquetry.

No. 6. Scroll-work border of foliage with swans, fountain, and fish, for painted decoration.

No. 7. Fret border for painting or inlay.

Nos. 8 and 9. Fretwork for inlay or mosaic. Similar examples are found in ancient pavements shaded as in No. 9.[1]

[1] All decorations of pavements should be by flat ornament and not shaded as if in relief. If applied to a wall surface the decoration may with propriety be executed in relief, but not shaded if in flat ornament.

CHAPTER X.

CHINESE ORNAMENTATION.

OF all known forms of architecture and ornament, that of the Chinese is generally considered the most ancient, or at least that it is quite as ancient as the Egyptian. But the origin of Chinese art is involved in mystery, and so little do we really know of its commencement, or of its progress, that we are quite unable to trace its history. Much of the Chinese ornament and other minor works which are now brought to this country, appear to indicate the existence of a higher state of art at some former time than can be assumed of the Chinese at the present day. Their works strike one forcibly as being a somewhat dim reflection of a more lofty cultivation and much higher attainments in art, which may have existed among them at some remote period of their history.

As a people they have, doubtless, many of the elements of a great nation. They are endowed largely with skill, industry, patience, and application. They are the working bees of the great human hive. They excel in constructive talent and in the technic arts, but they manifest no progress in the inventive faculty. Were they always so? One can hardly answer in the affirmative; for their present comparatively high state of cultivation could not have been reached but by degrees. We are, therefore, necessarily obliged to fall back upon another supposition—that they were, at some distant time, a much greater people—that they then cultivated the arts with a much higher power than they now possess—and that, after having reached a lofty summit, they are now gradually receding, and retain only the remains of their former greatness. The

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empire is of so high an antiquity, that, if one may be allowed the expression, it seems to have reached a second childhood, and therefore exhibits no sign of progress.

The Chinese show much skill in ornamental workmanship, cutting and working granite with great perfection. Their garden structures, balustrades surrounding tombs, and many parts of their public buildings, are executed in marble in an admirable manner. In the manufacture of bricks they are unrivalled. These form their usual building material, and they put them together with great precision, forming with them triangles, squares, circles, and even flowers. Their roofs are covered with tiles, often of a brilliant yellow—the imperial colour. For ordinary buildings other colours, such as green and red, have to be adopted. The roof tiles suggest that bamboo was first used for roofs, and gave origin to the round form of the upper tiles. Each end of the ridge of the roof is often ornamented by a dragon, and in some of the grander temples and palaces, these are formed of very large and beautiful pieces of majolica work. On the hips, leading to each corner of the roof, are a number of smaller animals; which, as well as the dragons, are supposed to protect the house.

The architecture of the country is essentially wooden, and these wooden forms, as in other countries, may be found repeated in stone, marble, and metal. Many temples, houses, and garden pavilions (Fig. 102) are, however, wholly of wood, and the roofs are commonly supported on triple brackets,—a striking feature, and bearing a strong resemblance to Japanese and Indian construction. The houses are erected upon one common type: the front facing the street is either entirely plain, with no opening but the door, or is occupied as shops. The houses of the better classes

Fig. 102.

have a gallery or verandah in the upper story, and terraces are often formed upon the roofs, surrounded by neatly painted railings.

A number of very handsome *pailows*, or monumental gateways, are to be found throughout the country erected in granite, marble, or glazed tiles, in yellow or green, and having a very good effect; but no one who is acquainted with the gateways of the Sanchi Tope, in India, can fail to notice the marked resemblance, and their wooden origin is evident at the first glance.

Ancestral worship in China leads to such a profound veneration for graves, that a Chinaman never disturbs one; he will plough round it from generation to generation, but he would never be guilty of the sacrilege of destroying it. The result is that the whole country is one vast cemetery. The usual form of the grave is a mound commencing from a yard in diameter, and there are parts of the country where, as far as the eye can reach, nothing but mounds can be seen. Among these the tombs of the Ming dynasty (which ended in 1628), situated about 40 miles

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north of Peking, are of very imposing appearance. They are approached by a long avenue, with colossal stone figures on each side, and pailows or gateways in white marble. At the end of the avenue the tombs become visible, extending for some miles round the base of the hill. There are thirteen of them, that being the number of emperors buried at this place. The tomb of Yung-lo, who was the first of the Mings buried here (in 1425), consists of an artificial earthen mound about half-a-mile in circumference inclosed by a wall 20 feet high all round. To the south of the mound is a rectangular space of about 1200 feet long by 500 feet wide, inclosed by a wall, containing temples and other buildings, at the altars of which offerings are made. The temple at an emperor's tomb is for this purpose, and is an important addition to the original tumulus, its plan being exactly that of a *yamun* or palace. In China the difference between domestic and ecclesiastical architecture does not exist. The temple there is only a better kind of house. If it is a grand temple, it resembles a palace, and this is the case at the tomb of Yung-lo. The tablet or tombstone within it is a tall block of marble placed erect on the back of a tortoise. Another building of importance is the grand hall, which in this case is one of the finest of its kind in China. It is placed on a stone platform, surrounded by a low marble balustrade. The hall is 220 feet by 92 feet; and the roof, covered with tiles of a rich yellow, is supported by sixty pillars, sixteen of which are 60 feet high and the others about 40 feet. The wood is teak, and although full 400 years old, the building is as perfect as on the day of its erection. It has the usual frieze, including a triple row of brackets, and the roof is like that of all other imperial structures.[1]

The city of Peking is but an extended village of dirty streets and crumbling walls going to ruin. Near the Summer Palace of the emperor, and standing on a terrace, is a temple wholly constructed of beautifully coloured majolica, rich and bright in effect, all covered with ornament and Buddhist figures. Close beside it is a very fine temple, formed entirely of bronze, with the wooden forms repeated in metal. Besides these, there are a number of imperial temples, such as the Temple of Heaven or the Great Dragon, the Temple of the Earth, the Temple of Agriculture, the Altars of the Sun and Moon, and others.

Among the most remarkable and peculiar buildings in China are the towers called pagodas; their origin is involved in mystery, although it is known that the celebrated porcelain pagoda at Nanking was a memorial of gratitude, while others were commemorative of victories. Many of them are of great antiquity; one about 30 feet high Mr. Gutzlaff considered to be about twelve hundred years old. They are generally built of brick, and sometimes cased with porcelain. They mostly consist of nine stories, though some have only seven, and others not more than five; but the stories are invariably in odd numbers.[2] Their form is usually octagonal, and each story has a gallery with ornamental gilt iron rails, below which are projecting roofs turned up at the angles, and covered with glazed tiles of a rich yellow colour, which receive from the sun

[1] Condensed from a paper on the architecture of China, read in 1873 at the Royal Institute of British Architects, by William Simpson, F.R.G.S.

[2] Every part or form in Chinese architecture has a symbolical meaning—thus Heaven is odd, Earth is even; again, Heaven is round, Earth is square.

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a splendour equal to burnished gold. The apex of the tower is finished with a pole surmounted by a ball with chains and iron hoops, and at each angle of the several roofs a bell is suspended, which is rung by the force of the wind, producing a jingling sound not altogether unpleasant."[1] The pagoda at Nanking, erected in the early part of the fifteenth century, now in ruins, was 236 feet high, and consisted of nine stories.

The Chinese employ polychromy as an important and essential part of their architecture; so much so, indeed, that with them colour becomes more important than form. The result is so singularly pleasing and satisfactory, that there cannot be a doubt that a more extensive use of colour would be advantageous in other styles of architecture. "In statuary they do not appear to have ever been very successful, but in other carving they are perfectly at home, and it would be difficult to surpass some of the dragon-entwisted columns to be found in the temples of Central China. There is also great grace in the leaf-tracery occasionally to be met with in the balustrades with which they delight to adorn their quays and gardens."[2]

It is, however, in the ceramic art that the Chinese excel, although even in this art the Japanese have gone far beyond them. They prefer to imitate rather than to originate; and the utmost that can be said is, that some of their imitations are as perfect as, and in truth undistinguishable from, the more ancient wares from which they are copied.

When porcelain was first made is not known, but, in all probability, that kind commonly called by us "china" originated in that country. The great Ming dynasty (about A.D. 1400) is generally cited as the period when porcelain was brought to perfection, and first began to be decorated with flowers and buds in rich enamel colours. How highly these products were valued in Europe, when first introduced, may be inferred from the costly and persistent efforts made alike by governments and individuals at Dresden, Sèvres, Berlin, and in England, to discover the materials and the processes employed, and to produce similar works.

The ornamentation found upon porcelain consists mainly of flowers and foliage; dragons and birds, conventionally rendered from nature; scenes in gardens containing houses and terraces; and figures delineated in a soft manner but without much expression. There exists a great similarity between the ornamentation of the Chinese and their neighbours the Japanese, and without doubt the latter have borrowed largely from the former. The Japanese, however, are gifted with a higher artistic ability, and they give evidence of a progress which, whatever may have been the case in former times, we now look for in vain among the Chinese.

The principal charm, however, in oriental china is its harmonious colouring, in which, as with colour when applied to buildings, the Chinese appear to hold a far higher position in art than they do in regard to form. Without being able to observe any clearly defined rules by which they are guided, their colours are strangely fascinating to the eye and rarely inharmonious. Apparently they proceed more by a sort of instinct or some natural gift,

[1] *Dictionary of the Architectural Publication Society.*

[2] *Catalogue of Chinese Objects at the South Kensington Museum*, by C. Alabaster.

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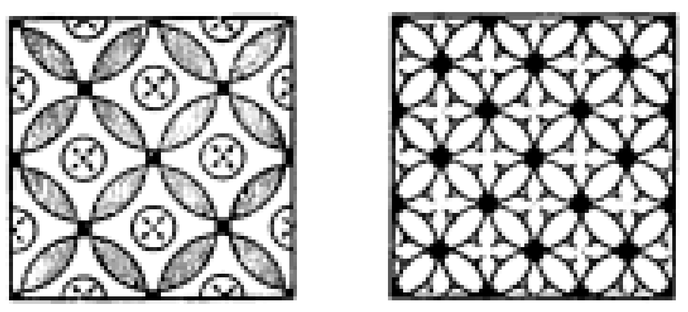
than by any rule or method. This special talent is not confined to the Chinese; but it apparently belongs equally to the Japanese, the natives of India, and more or less to all other Eastern nations.

The Chinese, in their pictorial works, make no attempts at light and shade, but all is effected by colour alone. Houses and landscapes are represented in a peculiar kind of perspective, and as if looked down upon. Red among the Chinese is emblematic of joy, and their figures are often outlined in that colour. In their woven fabrics they have the happy power of balancing their colours with great skill, the fullest tones never overpowering the more delicate shades, and the tone of the ground being always in harmony with the ornament by which the fabric is covered. In their printed paper-hangings the treatment of figures, landscape, and ornament, although conventional and frequently inartistic, seldom oversteps, by the addition of shadowing, the legitimate bounds of decoration.

Their facility in drawing is very great, and they bestow upon their work an infinite amount of labour, delineating with the utmost patience and care every minute portion of the subject they are engaged upon. They are very fond of diapering certain portions of their works, and nowhere is their remarkable power of drawing more observable than in the precision and regularity with which they repeat, by hand, over a large surface a complicated geometrical pattern. The most successful forms of these diapers are those which have a geometrical basis. Many of these, however, are not new, or do not specially belong to the Chinese, but are met with in other styles. No entirely fresh combinations of geometrical lines can be invented, consequently we often find somewhat similar results attained by lines which are common to different countries. Of this the "Greek" fret is a familiar example; many various forms of it are met with, coming frequently from opposite quarters of the globe.

A well known embroidery pattern is in use at the present time, which was also common

Fig. 103. Fig. 104.

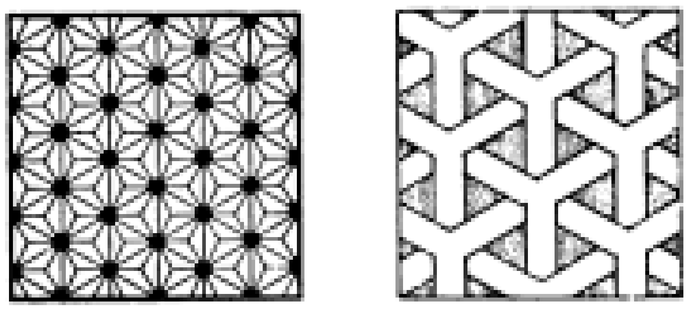


in the mediæval embroidery of the thirteenth and fourteenth centuries. Of this character

Fig. 105.

and form are Figs. 103 and 104, which are so frequently employed by the Chinese, both as

Fig. 106. Fig. 107.



borders and continuous diapers. They have many triangular arrangements for covering surface, as Fig. 106, which again is the same as may be seen cut on a South Sea Islander's club. (See Fig. 105.) There are other triangular arrangements which are more uncommon, and are extremely ingenious—such as that shown by Fig. 107, which is very effective when filled in with two shades of the same colour; also a curved arrangement

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upon the same form, Fig. 108. There are arrangements upon the hexagon, the square, and octagon (Fig. 109), as well as upon the diamond, zigzag, and other forms.

Fig. 108.

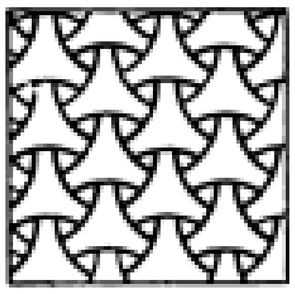
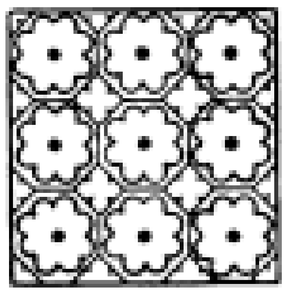


Fig. 109.



Some of their borders of curved lines, as in Fig. 110, appear as if derived from classic mouldings; but one can hardly imagine the Chinese borrowing ideas of art from any other country.

Fig. 110.

They are particularly fond of every variety of the fret form, but these usually differ from all classical frets in their not being continuous. Fig. 111 is an example as applied to railing for a balustrade. They have a very clever

Fig. 111.

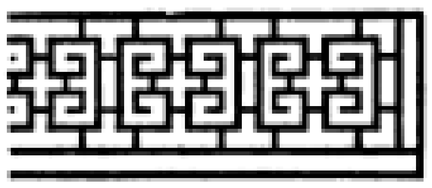


Fig. 112.

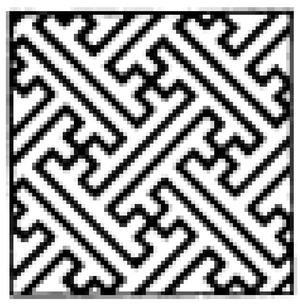
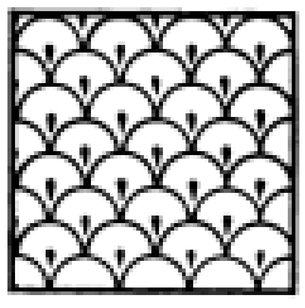


Fig. 113.



fret or key diaper, Fig. 112, which is also frequently found in Japanese work, as in the ground No. 10, Plate 22. It is a favourite ground for vases, screens, and other work. Scale or imbricated forms (Fig. 113) are frequent, worked out in various ways and in a variety of colours. Combinations upon these simple arrangements are very numerous, and many of them extremely puzzling and ingenious. They may be frequently adopted as suggestions for other combinations, where geometrical diapers or borders are sought for.

In the carving of all kinds of wood, ivory, and jade the Chinese display great fancy and ingenuity, as well as extreme delicacy; and, notwithstanding their love of the grotesque, they frequently obtain an effect which excites considerable admiration.

In lacquer-ware they are scarcely equal to the Japanese, although the art is largely practised among them. The art of enamelling, again, though it was formerly much pursued, is now apparently neglected, and the Japanese far excel them both in beauty and finish, more especially in the kind known as Cloisonné enamel.[1]

The working and casting in metal has been practised by the Chinese from remote antiquity. They have bells, dating from almost prehistoric times, many of them of such enormous size that the largest bells in Britain would appear small in comparison.

Works in bronze—such as figures, animals, incense-burners, gongs, and numerous other articles—have always held a prominent place among the Chinese, and the art has been practised by them at certain periods with considerable success. Iron bridges were erected centuries before they were ever heard of in Europe, and in Northern China many an enormous joss or idol, cast in iron, is discovered standing amid ruins of temples, destroyed by time or iconoclastic rebels.

[1] This kind of enamelling derives its name from the pattern being formed by wires or bands of metal soldered to the ground of copper or brass, separating the various coloured enamels, and appearing on the surface of the work surrounding and outlining each object. Each separate compartment is called a *cloison*.

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Plate 21.

In the panel No. 1 the picturesque treatment of the bamboo, with the hanging vase, the gracefully arranged flowers and foliage, and the life added to the composition by the birds and insects, is very pleasing, and in the Chinese manner, although it may not be very high art. If looked at as a "motif" for panel decoration, it offers an excellent suggestion, and should be worked out in colours on a light toned or a gold ground.

No. 2 is three fans arranged triangularly in a circle, with intermediate flowers on a gold ground.

No. 3 consists of three overlying circles, in a trefoil form upon a fish-scale ground, containing geometrically formed four-petalled flowers.

No. 4 is formed by a diagonal zigzag line in two colours with filling-in of flowers and leaves, applicable to textile stuffs.

No. 5. A panel showing the conventional treatment of a female figure in a garden. The borders are made up with flowers and other forms peculiar to the Chinese.

No. 6 has a fret-formed square panel in a circle containing a flower. Around the circle is a border with trefoil foliage flowing from the circle, the oblong sides being filled up with geometrical forms and flowers.

No. 7 contains dragons or hydras, with corner flowers and "crackle" filling-up in the spandrels. These grotesque and quaintly drawn dragons frequently occur, and form highly characteristic features in Chinese ornamentation. They typify the evil spirit which is supposed to exist in the world, and when placed on roofs are sometimes shown as pinned down to the building by a sword. The idea is the same as the superstition in this country of the horse-shoe nailed over the door, to prevent the entrance of all warlocks and witches. The Chinese notion of an eclipse is represented by a golden ball, with a monster of the dragon species floating in mid air, and supposed to be advancing with open jaws to swallow up the golden orb which indicates the sun. Thus they typify what they consider to be evils, as dreadfully ugly monsters, ready to appear out of darkness to engulf them in their enormous jaws.

No. 8 is from a heart-shaped hand screen or fan, containing a dragon vase from which grows a rose, supported on a flower-stand with earth and side foliage.

No. 9 has a flower represented symmetrically on each side of the centre of a hand screen or fan, issuing from a shell. The flowers are in colours upon a gold "crackle" ground. This crackle is taken from the china, in which the glaze has been cracked by heat or time, and therefore such examples are supposed to be of ancient date. In modern work the crackle is frequently imitated by painted lines, and its origin is found in the Chinaman's love of the antique, and his desire to reproduce the effects of time or imperfectly glazed specimens of early workmanship.

CHAPTER XI.

JAPANESE ORNAMENTATION.

NATIVE art in Japan is closely allied to that of China, and both nations appear to be alike gifted with art powers, indigenous to the soil, and apparently flourishing without care or culture. More particularly is this the case in that marvellous perception of form and colour, founded upon the laws of nature, that seems to be intuitive in Asiatic races. In contrast-

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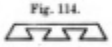
ing the arts of China and Japan, what strikes one forcibly is the marked difference in the expenditure of labour upon their respective works—the Japanese aiming to produce the greatest possible effect with the least amount of trouble, whilst the Chinese make minute painstaking a principal virtue.[1]

Whilst the people of Japan have sought safety in seclusion, they seem to be by no means insensible to outward influences. With all their love of feudalism and seclusion, however, they appear to be much more free in thought than their neighbours the Chinese; and while they are strongly bound by tradition, they are ever ready to learn from others, as many of their arts and manufactures clearly demonstrate.

In their architecture, construction usually comes, as it should, before decoration. It may be said that the man who constructs a common deal box by dovetailing it together produces at the same time a beautiful ornament (Fig. 114), and the dovetail which he forms becomes doubly beautiful because it grows out of the construction. So with the Japanese: in their buildings they cut their corbels and brackets into pleasing forms, carve their beams, and shoe their rafters with gilded and engraved bronze, but all rises naturally out of the construction, Fig. 115.

Fig. 114.



Architecture, however, in its highest sense, is an art unknown among the Japanese. They make for themselves and their gods only temporary homes and shrines, commonplace in construction, and tent-like in design. Their houses and temples are mostly of one story, although occasionally of two. They are formed of wood framed together, with elaborate bracketing supporting widely projecting tile roofs, the whole being carried on stone foundations. As with the Chinese, the form of the roof is generally concave, and turned up sharply at the angles; or it has a double curve, convex at the ridge and concave at the eaves. The tiles with which it is covered are of a grayish black colour, and the joints are covered with a thick roll of white cement. The ridge and hip ornaments are of great size, and are formed of several courses of tiles and cement, terminated at the extremities by well-designed terra-cotta ornaments, Fig. 116.

Fig. 115.

Fig. 116.

The frequent occurrence of earthquakes in Japan may probably be the reason why the Japanese limit the height of their buildings;

[1] The matter of this chapter is partly taken from a Discourse on Japanese Art, delivered by John Leighton, F.S.A., at the Royal Institution of Great Britain, May, 1863.

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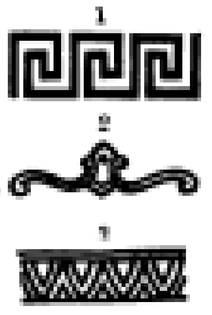
and the same reason may also render a wooden construction, in which each part is firmly framed together, an absolute necessity The general appearance and arrangement of the ordinary houses have not altered since very early times. The walls are constructed of vertical and horizontal framework of posts and beams, mortised and tenoned together, filled in with bamboo laths, coated with mud in several layers, and finally plastered over One external wall or more, and most of the internal walls, are not covered with plaster; being filled in between the uprights with light wooden screens, sliding past one another upon porcelain rollers in grooves formed in the heads and sills of the framework, so that the whole or any part of the partition can be thrown open at pleasure. Where light is required, these partitions are filled in with tough translucent paper, which serves the purpose of glass. In other cases, in interiors, these sliding screens are covered with paper decorated with patterns or paintings. Each room opens into the one adjoining, and, except in the largest houses, passages are of rare occurrence.

The temples of Japan are by far the most interesting buildings to be found in the country. They are usually placed in quiet and shady groves approached by imposing flights of stone steps, and long avenues bordered with lamps both of stone and bronze. Those temples of the Buddhist faith are accompanied by gigantic statues in bronze. At Kamakoura a bronze effigy of Buddha, sitting on the lotus throne with his legs doubled beneath the body, is 60 feet high, and was erected more than six centuries ago. The temples abound with wood carving, tastefully disposed, representing animals, birds, and flowers of every kind, sharply and beautifully cut, the whole being often enriched by well-harmonized colours, with gilding and bronze ornaments. From the frequent recurrence of the elephant in their carvings—an animal almost unknown in the country—there can be little doubt but that they have derived much of their architecture and sculpture from India along with their religion. It is also very curious to find many types from the ancient Egyptian, Assyrian, and Greek perpetuated in the works of this remarkable people.

In their cemeteries there are hundreds of tombs, the typical form of which is represented by Fig. 117, a form suggested by the sacred bean and lotus, and of very frequent occurrence in India. The ornaments, Figs. 118[1] and 118[3], are purely classic. The Greek fret and echinus, or egg-and-tongue moulding, are both used in China and Japan, and key or fret patterns, of which an infinite variety have been produced, are very popular. Fig. 118[2], in which scrolls are united to a bud in the centre, after the manner of the Greek anthemion ornament, is also common, though it has more of an Assyrian feeling than either of the others.

Fig. 117.

118.



But it is in decorative art, as applied to almost every object of daily use, that the Japanese show their superiority over most other nations.[1] In the ornamentation of

[1] Much of this superiority is no doubt due to the wide diffusion of art instruction in Japan. In a collection of Japanese books recently made by Professor Nordenskjöld were the following proportions of volumes:—history 176, poetry 137, art of war and fencing 41, dictionaries and grammars 18, geography and maps 76, natural history 68, medical 13, trades and farming 43, and *books containing patterns 73*. Most of the books are provided with innumerable drawings, some of them perfect master-pieces; and the 73 pattern-books must be of value not only as to the history of art in the country but as to different branches of industry.

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"some of the commonest fabrics, such as towels and dusters of the least costly materials, may be seen choice designs consisting of the most simple elements. A broken bamboo or two in counter-changed colours, a flight of birds or a few creeping plants, suffice in their hands to produce the most pleasing effect, as artistic as they are original."[1] But by far the most striking feature in all their works, and that which creates the greatest surprise in the minds of European artists, is their extraordinary fertility and readiness of invention—a fertility which produces such an apparently endless and astonishing variety of design and arrangement. Sir Rutherford Alcock says that, "of the thousands of cheap fans now scattered over Europe, he doubts whether two would be found exactly alike."[2]

It is this extreme love for producing variety, united to their graphic power of faithfully representing natural objects with every variation of form, movement, and expression, which is at the root of all Japanese art. In going to nature for their inspiration they have perceived that no two parts are exactly alike, even to the two halves of a leaf—that all is unstudied and irregular, producing endless variety both in form and colouring. But they have not failed to go further than the mere surface of things, and have discovered that, beneath all this irregularity and apparent confusion in nature there exists the strictest geometrical precision and regularity. Upon these two opposite and seemingly contradictory principles the Japanese have founded their art. They shun an equality of parts, or rather the appearance of an equality of parts—

[1] *Art and Art Industries of Japan*, by Sir Rutherford Alcock.
[2] Ibid.

weighing with the steelyard B, instead of the scales A, Fig. 119; and although they give weight and balance in another way, it is not by uniformity. They dislike diametrical division, therefore they reject the division of Fig. 120, and adopt that of Fig. 121: frequently going still further by following the precedent of Nature, who never repeats herself either in spangling the skies with stars or the earth with daisies, Fig. 122. While, on the other hand, symmetrical arrangements

Fig. 119.

Fig. 120.

Fig. 121.

Fig. 122.

Fig. 123.

are not discarded by them, and geometrical diapers (Fig. 123) are adopted whenever it suits their purpose. Many of their diapers are the same as those used by the Chinese, some of which will be found illustrated on pages 61, 62.

The Japanese do not appear to have any precise rules for their guidance in their compositions; but they usually attain a happy blending of the regular with the irregular—the symmetrical with the unsym-

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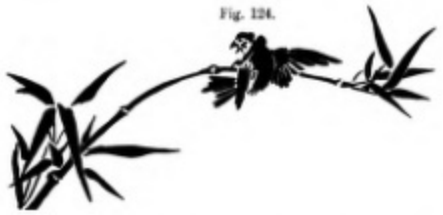
metrical. At one time the sole ornamentation of an object consists simply of a bird on a branch of bamboo (Fig. 124); at another,

Fig. 124.



the whole surface is entirely covered with elaborate ornamentation, circles and other forms being arranged in a perfectly regular manner, yet variety is obtained by the way in which these forms are filled in, or by the arrangement of the subsidiary ornamentation. Their natural love of the irregular is still dominant. When geometrical diapers are used, they are broken off abruptly, or are left in parts uncompleted. At other times the colours are varied, or the diaper is cut into some prescribed form, but repetition is seen and acknowledged as one of the means of obtaining beauty. The regular is sometimes maintained by the bringing of the irregular into geometrical forms; as when birds and foliage are arranged in circles, squares, hexagons, or other figures—for example, the bamboo in Plate 24, No. 2. The regularity of the circle is occasionally broken by the overlapping of another circle, Plate 23, No. 7; or it is bent over the edge of the object. Their power of thus obtaining variety is apparently unlimited. They never appear to be long of one mind, but are always seeking for change in design; at the same time they invariably retain an artistic balance, either by form, colour, or plain space. Variety is the distinguishing character of Japanese work, yet it never fails in symmetry; though in what constitutes symmetry these artists have a very different feeling from what we have.

The arts in Japan may be said to depend in an eminent degree upon the picturesque, though rarely to reach the pictorial. That is to say, the Japanese never produce a picture, because the principal element of pictorial art—light and shade—is wanting. Art of the highest kind may, and often does, exist without chiaroscuro, as in the compositions of Flaxman, which owe none of their world-wide fame to light and shade or colour. In the works of Japanese artists may be observed the effects of light and dark, somewhat akin to that of chiaroscuro, rendered with much truth to nature, and a dignified simplicity that many of our artists would find it difficult to imitate.

In ability of drawing Japanese examples vary greatly; therefore it is of the utmost consequence to the art student to know what to study. Many of their rocks, skies, and water appear to be borrowed directly from the Chinese, and are represented purely in their own conventional and peculiar manner; but their rendering of birds, plants, and flowers (Figs. 125 and 126), fish and insects, is marvellously true to nature, and all done with the lightest touch of the brush. Cranes, storks, ducks, and geese (Fig. 127) have all their characteristic movements hit off with wonderful precision and fidelity. When, however, we come to the higher class of drawing, as in the human figure, we find a deficiency.

Fig. 125.

Fig. 126.

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The hands and feet are seldom drawn well; the heads, although possessing great expression, are not natural; the dresses are

Fig. 127.

awkward and clumsy; and the whole, borders closely upon caricature. The larger coloured examples are remarkable for a certain typical rendering of the human face, not to be found in smaller engravings or in nature,—a droll sort of leer pervading all (Fig 128) with an Egyptian uniformity Apart from defective drawing the examples are interesting, showing much expression and action; whilst in colour they are suggestive, some of the hues and patterns being extremely handsome.

Fig. 128.

Their landscapes are very quaint, aerial perspective seeming to be beyond their power, except in a few cases, such as where white mists, rain, fog, and snow have been attempted. In depicting clouds the Japanese artist seems sorely puzzled—the tinted ribbons he stretches across the heavens looking like labels for inscriptions rather than floating vapours.

The smaller examples of figures from their picture-books, of which they are very fond, are full of fun and expressive drawing, being quite equal in spirit to anything done in this country at the present day, and yet accomplished with few lines and little effort, Fig. 129. Many of these have been engraved in Sir Rutherford Alcock's works. The best are figures in movement—porters lifting, balancing, and carrying their loads; an acrobat poising his companion; a juggler; street boys full of mischief, or weeping over broken dishes; ladies bathing, or caught in storms of wind and rain; and, indeed, depicting almost every phase of social and domestic life. The cleverness with which the different attitudes and expressions are touched off by their ever-facile pencil is well worthy of note. In composition two or more figures unite in the production of admirable lines; though, like the early artists of other nations, the Japanese make their point of sight very high, all their figures appearing as if looked down upon.

Fig. 129.

a, c, and b are from the smaller works; B, a typical mouth, from the larger.

In colour they are very judicious, rarely producing discords, either in their attempts at picture-making or in decorative art. Their style is quiet and refined, they use full low-toned colours in preference to excessively brilliant ones, in this respect differing from the Chinese. Of course it is not meant that the Japanese artists do not use bright colours, for few know their value better; but they use them in comparatively small proportions, cleverly supporting and contrasting them with the secondaries, and

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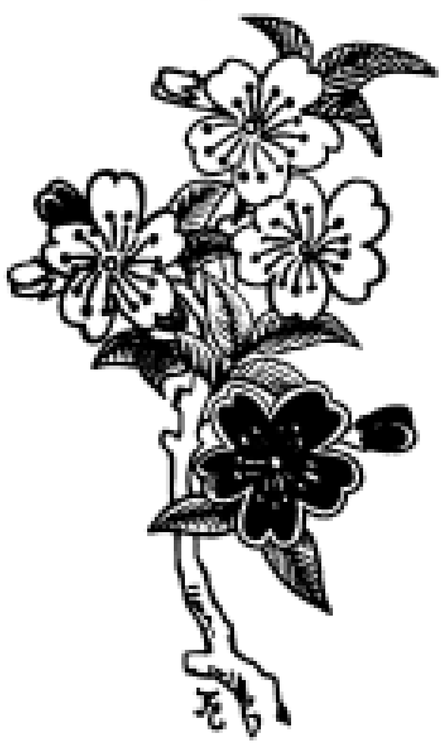
other compound colours, which they use in grounds and large masses generally

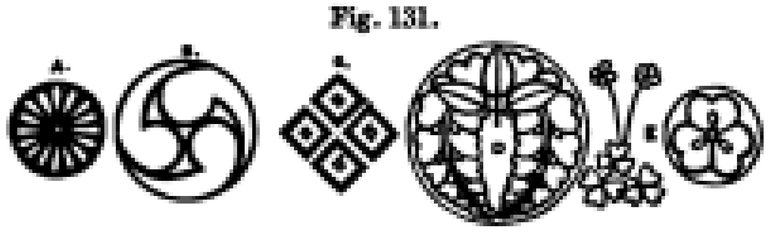
The principles of surface decoration adopted by the Japanese can nowhere be better seen than in their lacquer ware, which exhibits the greatest fertility of invention. The manner in which flowers and birds are bent and twisted over surfaces is highly curious, as also the way they suggest ideas for shapes—sometimes so true to nature as to make one wonder at the draughtsman's skill, in others so highly conventionalized as to make one doubt the authority. Hawthorn, blackthorn (Fig. 130), bamboo, and rush are very common and characteristically rendered, as also cranes and tortoises, and landscapes touched in golden outline.

Fig. 130.



Small round ornaments are very popular in Japan, probably from their resemblance to the crests or badges of the daimios—forms defended by law, in the same way as lions rampant and dragons displayed, are popular among ourselves. It is curious that nearly all these badges (Fig. 131 A,B,C,D,E) should be derived from floral ornaments,

Fig. 131.



Japanese heralds being doubtless guided by some principle—for in a first book for children may be found a popular badge in its conventional form, with a plant it is derived from, E, Fig. 131. A red sun, or rather a red ball, as we should call it, is the emblem of the empire of Japan, and is seen frequently in their books, as well as on their official documents.

Their belief in the air being peopled with evil spirits causes the Japanese artists to bring in dragons and other imaginary animals into their decoration and carvings. They represent the typhoon as a horrid dragon tearing up the earth and sea; thunder and lightning they depict as a grotesque demon, with a mallet or stick in each hand, beating half a dozen cymbals arranged in a circle over his head; and the winds, as an old man of sinister aspect, with an inflated bag on his shoulders, allowing the wind to escape from the corners, which are held by his hands. They have many other demons of a similar character, some of which, like the Chinese, they carve upon their buildings as a protection against others.

The Chinese are known to have been skilled as engravers upon wood and metal long before Europe had dreamed of tomes in black-letter; but who, a few years ago, would have ventured to claim for Japan also, a similar priority in colour-printing? Yet this appears really to be the case; for in no instance do their specimens bear evidence of having been copied from anything done in the western world, being hand-proofs, worked in flat tints, without a press.

If their printing excites our surprise, what shall we say of their paper? Certainly we have nothing like that article which plays so important a part in Japanese life, serving a hundred purposes unknown to us: alike protecting them and their houses from wind and weather; windows, coats, and handker-

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chiefs being all made out of that substance. It is not manufactured from rags, as our papers are, but of the bark of the paper mulberry, which furnishes an article much tougher than ours. The toughness and pliability of this paper is surprising, especially in the thinner sorts. The papers by which their walls or screens are covered internally exhibit great originality, variety, and striking effects of colour and pattern.

In pottery, as in some other arts, the Japanese greatly excel Europeans. The ornamentation of their works, of whatever kind, is skilfully adapted from nature, and is rendered in a striking and appropriate manner peculiar to themselves. In the art of enamelling, especially in that sort known as "cloisonné," they are very proficient. But whether it be porcelain, leather, paper, wood, stone, metal, textile fabrics, or any other material, the skill displayed in the decoration of these various substances is worthy of all praise. In artistic feeling they possess much of which our works are often lamentably deficient. The ease and facility which are so apparent in Japanese drawing, when contrasted with some of our own stiff and laboured productions, are qualities that we may look upon with envy and wisely seek to imitate.

At the same time, in the examination of Japanese art, we must be careful to discriminate between that which is worthy of imitation and that which is vicious in principle. For there can be no greater mistake than to suppose, because we find such subtle art feeling among the Japanese, that therefore all their work must be equally good. Those who have taken up Japanese art, and who affect the manner of the Japanese in their own works, will probably, like most copyists, be more liable to seize upon and reproduce their errors rather than to catch their better qualities. The object, therefore, of every art-student should be — not to copy, but to seek inspiration at the same fount that they have sought theirs— nature; and then to embody his conceptions in his own way, after having learned what he can, not only from the Japanese, but from every other available source.

Plate 22.

No. 1. Aquatic birds and river plants, all full of expression. Japanese treatment of circular figures is very various.

No. 2. An unsymmetrical arrangement of interlaced lilies.

No. 3. A wheel or spring form, as if in movement.

No. 4. A curious diaper of conventional birds swimming on water, represented as looking down upon them.

No. 5. Birds as seen in rain.

No. 6. Sections of flowers unsymmetrically arranged.

No. 7. Bird pattern arranged symmetrically.

No. 8. Birds and flower brought into a circle.

No. 9. Butterfly diaper; the insects being placed bi-symmetrically and counterchanged in colours.

No. 10. Square on octagonal form, placed on the key or fret diaper, similar to what is found in the Chinese, Fig. 112.

No. 11. Conventional flower decoration.

No. 12. Natural flowers on a conventional form.

Plate 23.

No. 1 presents an interesting example of the symmetrical arrangements which are occasionally met with. It embraces a great variety of objects, very cleverly disposed and full of life, as if on the sea-shore: a crab in the centre, with lobsters on each side, dolphins and flying-fish; one of the flying-fish forming the centre over the crab being represented skimming the distant water and approaching towards us. The breakers on the shore are very conventionally rendered, giving the whole an odd mixture and quaint conceit, which is far from being unpleasing.

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No. 2. Classic forms imitative of Greek or Roman furniture are sometimes met with in Japanese works, as in this example, which represents a tripod-chair in which is placed a vase of flowers. It is probably a recollection from books shown them by missionaries or others from the West. An imitative people are sure to be struck with any new form they may see.

No. 3 contains some of their peculiar fret-forms growing from a bulb, the whole being arranged in the form of a trefoil issuing from a circle.

No. 4 is a conventional and yet lifelike arrangement of interlaced fish surrounded by a narrow border of water, which partakes of the general outline, and by its dark colour throws up the fish with great distinctness.

No. 5 is somewhat of the same character as No. 3, taking up the vase-form, which is filled in with fret and leaf ornaments.

No. 6 is a landscape, with bird of prey evidently intent upon the fish, which is attempting to ascend the cascade. The sun with clouds, the gnarled trunk of the tree, and the plants in the foreground are all worth noticing, and are highly characteristic of Japanese art when representing nature.

No. 7 shows two overlapping circles, as may have been suggested by seals or coins. The first contains a fan, with a floor indicated by fret-work, and the sky studded with stars. The underlying circle has a wheel form of eight arms indicated in two colours. Pattern upon pattern, and form upon form, is by no means uncommon in Eastern art, but the way in which circular patches are placed upon frets and grounds is peculiar to China and Japan.

Plate 24.

No. 1. Four-petalled flowers contained in continuous vesicas, the colours alternately change on each side the centre line. The lower margin contains a ribbon border.

No. 2. Hexagonal figure formed with bamboo, the articulations of the stem forming the angles, from three of which issue a triple arrangement of leaves, the centre ones meeting in the centre of the circle and the lateral ones turning down to the unoccupied angles. The ground is spread with flowers irregularly.

No. 3 is a hexagon with three spirally-formed petals, alternating with what are apparently meant for stamens.

No. 4. Fans, a damio's device. An odd admixture of animal and vegetable life, among which is seen a portion of a sculptured head in bas-relief. The birds among the reeds, the animal climbing a tree, the mermaid and her offspring, and the triple arrangement of the leaves of the water-lily, each of which also contains the flower,—but, above all, the poor old horse standing shivering in the wind up to his fetlocks in rank coarse grass, which is evidently not inviting to his palate,—all show what intensity of expression these artists are able to throw into comparatively minor objects. Not a line out of place or that could be spared.

No. 5 is a fret diaper in two colours, carried diagonally by a Z-like line.

No. 6 is a leaf border with fret edge on a matted ground.

No. 7 is a treble diagonal key-fret border, with zigzag edges and circles in the intervals.

No. 8 contains one of these extraordinary conventional birds, which, although so unlike anything in nature, is yet full of life and vigour. The clouds are indicated by curiously formed curly outlines.

No. 9 is a border formed of the nautilus, sailing on a conventional sea, with the sand of the sea-shore in the foreground, and curiously formed clouds above.

No. 10 has a triple leaf-formed arrangement, with a spur or three-pronged figure in the centre.

No. 11. An S-form on an oval flower.

No. 12 represents a tortoise and aquatic animals among reeds and bamboo.

No. 13. Fish with water and land back-ground. Nothing seems to come amiss to the Japanese,—every form in nature is introduced in some shape or other. Whatever does not in any way accord with their ideas of the beautiful is altered by them at once, and rendered in their own odd, conventional manner.

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CHAPTER XII.

INDIAN ORNAMENTATION.

THE vast extent of the country, and the endless variety of examples of its ancient art which are still extant, render the examination and study of the architecture and ornament of India a difficult and extremely intricate subject. Instead of one style of architecture, many styles have existed, some of which commenced many centuries before our era. And there is the further difficulty, that we possess scarcely any documents to assist in unravelling the large and truly tangled skein of the history of Indian art.

Mr. Fergusson, our highest authority on Indian architecture, says:[1] "One of the greatest difficulties that exists—perhaps the greatest—in exciting an interest in Indian antiquities arises from the fact, that India has no history properly so called, before the Mahommedan invasion in the 13th century. Had India been a great united kingdom, like China, with a long line of dynasties and well recorded dates attached to them, the task would have been comparatively easy, but nothing of the sort exists or ever existed within her boundaries. On the contrary, so far as our knowledge extends, India has always been occupied by three or four different races of mankind, who have never amalgamated so as to become one people, and each of these races have been again subdivided into numerous tribes or small nationalities, nearly, sometimes wholly, independent of each other—and what is worse than all, not one of them ever kept a chronicle or preserved a series of dates commencing from any well-known era." This absence of any historical record is the more remarkable, because India possesses a written literature of great variety and extent.

At a very remote period, supposed to be about 3000 years B.C., the Aryans, a people coming from Central Asia, entered India across the Upper Indus. About six or seven centuries before Christ Buddha was born, although Buddhism did not become the state religion until about 250 B.C. With the adoption of Buddhism, temples and other works, which previously had been of wood, were erected in stone. From this period, therefore, we have a series of architectural monuments handed down to us which are Buddhist in style, and are so for five or six centuries after that time, when Buddhism ceased to be the religion of the country. Then arose the architecture of the Jains, but the religion of the Buddhists and that of the Jains are so similar that the style of their architecture and their sculptures are almost identical.

These early remains are very numerous, and consist of structural buildings and cave temples cut out of the solid rock. The

[1] *History of Indian and Eastern Architecture*—a valuable work, to which we are much indebted for the material of this chapter.

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character of the former is that of great elaboration of ornament, the entire surface of the structure being covered with sculptured work. The caves are cut out in exact imitation of the interior of an actual structural building. The most interesting of these are the *Chaitya Halls*, or places of worship of the early Buddhists. They are exact counterparts of the churches of the Christians, not only in form but in use. One of the oldest of these, probably executed before the Christian era, is situated at a place called Bhaja. Fig. 133 is a plan and Fig. 134 a transverse section of this Chaitya Hall. It is 60 feet in length, and in the form of nave and aisles, with a semicircular end, in the axis of which is a *dagoba* or altar. These caves appear to imitate wooden structural buildings, and in their details are a transition from the use of wood to stone. The ceilings, which are semicircular in the centre and a quadrant of a circle for the aisles, have ribs cut in the rock, but which are evidently copied from the wooden forms of previous structures. In front was a wooden screen, which has now disappeared, but the holes to receive its posts and the mortises by which it was attached to the stonework are still there.

Fig. 134.—Interior of the Bisma Kurm, Ellora.

Fig. 133.

Fig. 132.

Many other Chaitya caves exist, the largest and finest of which is at Karli on the road between Bombay and Poonah. In plan and section it is very similar to the one already described, consisting of a nave and aisles terminating in an apse round which the aisle is carried. It is 126 feet long by 45 feet 7 inches in width, but it is only about 45 feet from the floor to the apex. Fifteen pillars on each side separate the nave from the aisles; each pillar has a tall base, an octagonal shaft, and richly ornamented capital, on which kneel two elephants, each bearing two figures, all very much better executed than such ornaments usually are. Above this springs the roof, semicircular in general section, and ornamented, even now, by a series of wooden ribs probably coeval with the excavation. Immediately under the semi-dome of the apse, and nearly where the altar would stand in a Christian church, is placed the dagoba. The general effect of these Chaitya caves will be more clearly understood by Fig. 134, which represents the interior of the Bisma Kurm, at Ellora. This indicates the stone-ribbed ceiling of the nave, with the dagoba, containing a sitting figure of Buddha, in the semi-circular apse.

These peculiarities are found more or less developed in all the other caves of the same class in India, varying only with the age and the gradual change that took place from the purely wooden forms that prevail in these

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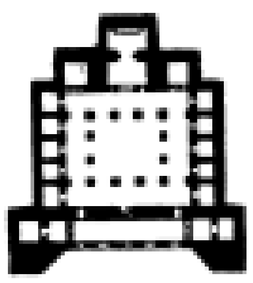
ancient caves to the stone architecture in the more modern ones.

Other caves, called *Viharas*, were formed with a central hall, with cells around, as in Fig. 135, from Ajunta. They were a species of monasteries for the Buddhist priests or hermits. Such monasteries were also frequently erected in regular structural buildings, and of several stories in height.

Fig. 135.



Besides the caves already described, others have not only been excavated internally, but have been carved and formed on the outside as well, so as to present the appearance of buildings erected in the usual way. Of these the rock-cut temple at Ellora, known as the Kylas, is one of the most notable examples. It belongs to the ninth or tenth century. In describing the Kylas Mr. Fergusson says that, "it is not a mere interior chamber cut in the rock, but is a model of a complete temple, such as might have been erected on the plain. In other words, the rock has been cut away externally as well as internally, but in cutting away the rock around it to provide an exterior, the whole has necessarily been placed in a pit." This difficulty has been avoided in the Raths or pagodas of Mahavellipore, as these were hewn out of enormous boulders of granite which were found lying near the sea-shore. They present the appearance of perfect isolated structures, and are supposed to be as early as the tenth century.

Among the monuments which have been left by the Buddhists none are more interesting than those which are called *topes*. The most extensive group of these is that known as the Bhilsa Topes, from a town of that name in the kingdom of Bhopal, near which they are situated. The group comprises about twenty-five or thirty examples, and the principal one among them is known as the great tope at Sanchi. Little is known regarding their object, but it is supposed that they were for containing precious relics, or to mark some spot sanctified by the presence or by some act of Buddha. The tope at Sanchi, constructed about 500 B.C., consists of a solid dome somewhat less than a hemisphere, 106 feet in diameter and 42 feet in height. On its top is a flat space about 34 feet in diameter, formerly surrounded by a stone railing, some parts of which are still lying there; and in the centre of this once stood a feature known to Indian archæologists as a *tee*.

The whole was surrounded by stone rails, which inclosed a space of about 140 feet in diameter. These rails are supposed to have been erected about 250 B.C. There are also four gateways, or *toranas*, as they are more properly called. Of these the south gateway is the oldest, dating about 10 A.D.[1] These gateways are covered with the most elaborate sculptures both in front and rear, representing various scenes in Buddhist mythology. They are formed of two upright square posts in stone and three horizontal beams above, slightly arched in the centre, extending considerably beyond the uprights, and looking like a gigantic piece of timber-work which has been imitated and copied in stone. But it is the sculptures and ornamentation, which are executed with great care and minuteness, that cause these gateways, very deservedly, to be considered excellent examples of Indian art at one

[1] A cast of the eastern gateway from this tope has now been placed in the South Kensington Museum. It is supposed to have been erected a little later than the south gateway.

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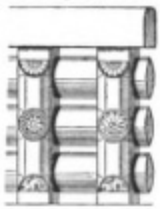
of its best periods. The front of one of the piers of the eastern gateway, for they are all different, is divided into stories containing figures with columns in bas-relief, and among these we perceive the two-headed capital, similar to those found at Persepolis. There are other parts which strongly remind one of Assyrian work. The side of one of the piers or uprights is filled in with foliage (Fig. 136), consisting of large flowers probably meant for water-lilies, and some of the spandrels between them are composed of the lotus, having a strong resemblance to the Assyrian—(Plate 5, No 2). These and other parts evidently point to a certain amount of classical origin.

Fig. 136.

The rails that surround the topes to which these gateways are the entrances, are also formed in stone and put together after the manner of wood-work, and are frequently very richly sculptured. The rail at the Sanchi tope is quite plain, but in a smaller one in the same group circular discs are added in the centre of each pillar and half discs at top and bottom (Fig. 137). The pillars are octagonal, and the discs are carved with roses, animals, and the five-headed serpent or *naga*. The top rails are held in their position by tenons cut on the top of the pillars, and the rails, which are lens-shaped, are slipped into holes prepared to receive them on either side of the pillars, the whole showing an essentially wooden construction.

Fig. 137.



These rails play an important part in Buddhist architecture, and upon them the workman lavished the utmost resources of his art. The rail which has been discovered at Amravati, of which some portions are preserved in the India Museum, is covered with intricate ornament and elaborate sculpture of a most interesting character.

Fig. 138.—Great Temple at Bhobaneser.

There are various other styles of Indian architecture, differing essentially from those of the rock-cut temples and topes, and in which the buildings are regularly constructed of solid masonry. Of these it will be sufficient to mention the great temple of Bhobaneser as the type of many others (Fig. 138), which seems almost certainly to have been built by Zelat Indra Kesari, who reigned from A.D. 617 to 657,—and taking it all in all it is perhaps the finest example of a purely Hindu temple in India.

The Hindus, although they frequently used the arch form for their roofs, never erected them upon the true principle of an

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arch, with radiating voussoirs or truncated wedges, but invariably kept the beds of their stonework horizontal, as seen in the well-known example of the Treasury at Mycenæ. It was, in fact, a series of brackets or corbels, advancing towards each other as they rise, and at last closed in with a single stone; the internal surface being then worked to an arched form. The capitals of their piers or columns were all again formed upon the same principle, that is, by brackets, to reduce the intermediate space to be spanned by the flat stone beam, Fig. 139. Even a kind of stone strut, which is often found rising from the columns, is formed by a series of S-shaped brackets joined together. The Jaina domes, ceilings, and curved roofs, which are extremely numerous, are all formed upon the same horizontal or bracketing system.

Fig. 139.

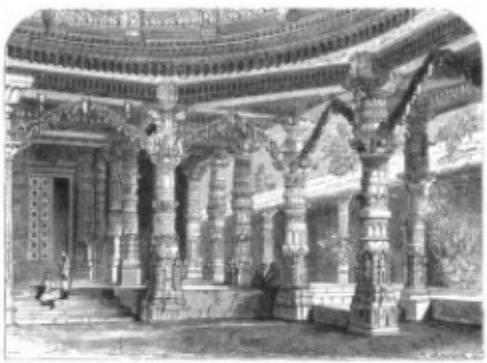

Fig. 140.—Vimala Sah, Jaina Temple, Mount Aboo.

The temple of Vimala Sah, on Mount Aboo, is one of the most perfect and beautiful of the Jaina temples. It is constructed wholly in white marble, and dates from about the year 1032 A.D. Fig. 140, which represents a portion of the dome and the pillars supporting it, will give some general idea of Indian bracket construction. The columns finish with the usual bracket capital, from which an upper portion is carried up with additional brackets, and upon these rest the great beams or architraves which support the dome. As, however, the bearing is long, the weight is relieved by the curious shaped strut or truss formed of S-shaped brackets, mentioned above, which, springing from the lower capital, seems to support the middle of the beam.

In the early part of the thirteenth century the country was conquered by the Mohammedans, who at once commenced erecting mosques upon a grand scale, or altering native temples to suit the purposes of their own religion. From that time a Saracenic or Moorish character was ingrafted upon the native Hindu styles, and the Moorish arch was introduced. But the native artists, who were largely employed by their new masters, constructed it at first upon the horizontal principle, and it was not until a later period that they learned the manner of erecting a true arch by the aid of voussoirs.

The bulbous domes of the Moors, as well as many other features, were also introduced at this period, and a new style was, in course of time, engendered which in many respects differed essentially from the ancient Hindu which had hitherto prevailed in India. In this fresh development, which was mainly due to Saracenic influences, there arose an extreme fondness for inlay with precious stones and coloured marbles, and decoration of every kind was carried to the utmost exuberance and elaboration.

After the Mohammedan conquest many

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powerful dynasties were established, among the most splendid of which was that of the Moguls, which commenced about A.D. 1494. and had its seat at Delhi. The palace of the Moguls at Delhi built by Shah Jehan, is, or rather was, the most magnificent palace in the East—perhaps in the world. It measures 1600 feet east and west by 3200 feet north and south.

Many other palaces were erected previously to that at Delhi, at Agra and other places by Akbar, who reigned from 1556 to 1605, and who was one of the greatest builders of his race. The palace at Allahabad, which was the favourite residence of this monarch, has been nearly obliterated, its materials being used to repair the fortifications. But in spite of English desecration the plan of the great hall can still be made out.

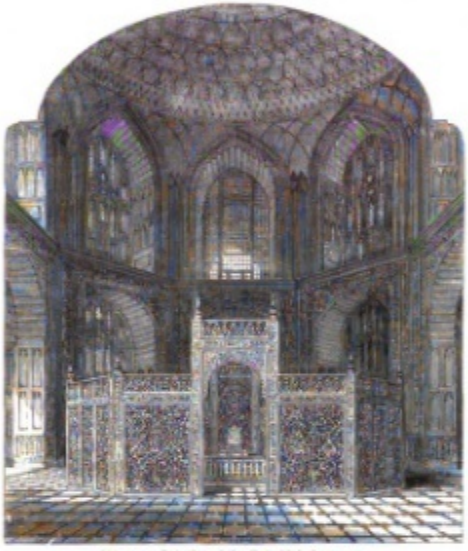

Fig. 141.—Interior of the Taje Mahal at Agra.

Besides their magnificent palaces, each Mogul emperor in India, like the Egyptians of old, appears to have employed himself in building his own tomb. Of these, many beautiful examples still remain, which amply testify to the skill and extraordinary talents of the architects and sculptors of that time. One of the most justly celebrated as well as the most elegant is the Taje Mahal at Agra, erected by Shah Jehan as the mausoleum of his queen Muntaz Mahal. It is almost impossible to convey an idea of the extreme beauty and delicacy of this monument, or of its complexity of design. Beautiful as it is in itself, the Taje would lose half its charm if it stood alone. It is its combination with other works—the platform on which it stands, with its tall minarets, and the perfect manner in which each is subordinated to the other—which makes up a whole that cannot be matched again in the world. The mausoleum proper is surmounted by a dome 58 feet in diameter and 80 feet in height, and the light is admitted through double screens of white marble trellis work, of the most exquisite design, one on the outer and one on the inner face of the walls. These serve to temper the glare that would otherwise have been intolerable in a building composed entirely of white marble.

The interior is represented in Fig. 141. In the centre of this apartment, and seen in the softened gloom of the subdued light, is the octagonal inclosure formed by a rich screen of perforated work of white marble, within which stand the tombs—that of Muntaz Mahal in the centre and of Shah Jehan on one side. These tombs, as well as the screens which surround them, are exquisite examples of that system of inlaying with precious stones which became the great characteristic of the style of the Moguls after

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the death of Akbar. Mr. Fergusson says, "All the spandrels of the Taje, all the angles and more important architectural details, are heightened by being inlaid with precious stones, such as agates, bloodstones, jaspers, and the like, combined in wreaths, scrolls and frets, as exquisite in design as beautiful in colour, and relieved by the pure white marble in which they are inlaid."

From this cursory glance at the architecture of India, and the illustrations of it which have been given, it will be understood that it consists of a series of styles, extending over a vast period of time. That these various styles naturally form two great divisions, each of which is perfectly distinct and separate from the other: 1. Hindu Architecture, which embraces the whole of the periods previous to the Mohammedan conquest; and, 2, the architecture subsequent to that conquest, and extending to the present time, which may be more properly distinguished as Indo-Saracenic.

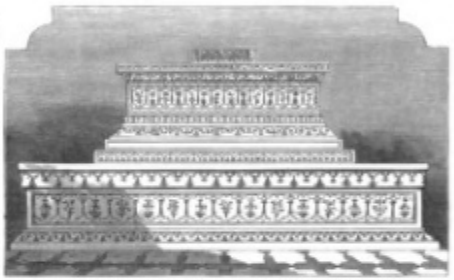

Fig. 142.—Tomb of Shah Jehan in the Taje Mahal.

What one is more particularly struck with, is the extraordinary lavishness of labour,—the wonderful elaboration of the ornamentation, combined with the utmost luxuriance of fancy,—the picturesqueness of outline, and the grandeur of the masses which Hindu architecture displays. In most instances the architectural forms are very simple, sometimes consisting almost entirely of very steep roofs or lofty domes, apparently adopted for the sole purpose of showing how much sculpture and carving can be displayed upon them. The buildings look like sculptured rocks; indeed it may be said that they are really so. For, apart from those temples which are carved externally as well as internally out of the living rock, these indefatigable Hindu workers seem to have piled up mountains of stone in flat layers or beds like the natural rock itself, in the same manner as the Egyptians piled up their pyramids. Then commencing at the apex, as in the great temple at Seringham, and many other examples, they proceeded to carve, literally, every inch of space with figures and elaborate ornament until they reached the ground; and whatever the amount of ornamentation, it very seldom obtruded itself so as to destroy the dignity or impair the general form of the structure which it enriched. Whatever the sect or religion, they carried out their works in the most durable of materials, and spared neither time nor labour even in modern times. Whether the material was granite, amygdaloid trap, or marble, the work had to be wrought into the most intricate and difficult forms, oftentimes into the most elegant and delicate tracery. A window in a desecrated mosque at Ahmedabad—in form a slightly pointed arch—has tracery representing three ordinary trees and four palms, their branches, leaves, and flowers extending over its whole surface. Mr. Fergusson says, "It would be difficult to excel the skill with which the vegetable forms are conventionalized just to the extent required for the purpose."

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Among plants the lotus was constantly used by the Buddhists, and evidently had a typical and symbolical meaning. The large roses or pateras, found on the rails and on the gateways of the topes, were striking and conspicuous forms of ornament. String-courses and bands formed of minute representations of the rails surrounding the topes, are of frequent occurrence, consisting of two or three horizontal beads with square cross-bands at intervals (Fig. 143). The large horse-shoe windows that lighted their Chaitya Halls was another constructive form which was turned into ornament. Continuous beads or pearlings are often met with, as in the border lines formed of them in Figs. 145, 146, also beads at intervals carved out of a horizontal bead (Fig. 144); four-petalled roses placed in a hollow at intervals, Fig. 145. Another example consists of roses with intermediate ones coming partially behind the others, Fig. 146. Other varieties have one edge of each rose concealed by the next. The flowing line shown in Fig. 147 is frequent, and the continuous scroll is not uncommon. The Assyrian honey-suckle and lotus is found on the capital of a commemorative pillar at Allahabad, and capitals having a strong resemblance to the Corinthian have been found in a monastery at Jamalgiri, pointing evidently to a classical origin.

Fig. 143.

Fig. 144.

Fig. 145.

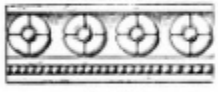


Fig. 146.

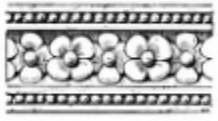
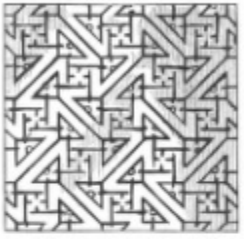


Fig. 147.

Upon the lower part of the tope at Sarnath, near Benares, is a very ingenious and singular diaper wrought in the stone work, consisting of a geometrical arrangement of great intricacy, a portion of which is represented by Fig. 148. Many of the ornaments upon the Buddhist remains are emblems, conspicuously among which may be often observed the five and seven headed *naga* or serpent, the *suastika* (see Fig. 55), and a triformed ornament called the *trisul*.

Fig. 148.



In the inlay work of the later Mogul period the beauty of the design is beyond all praise, and is often of the most elaborate description, representing all kinds of flowers worked in the most skilful manner in precious stones, the stones being carefully picked for each particular leaf or petal, so that all shading of the surface of the leaves is obtained by the graduated natural colour of the stones themselves. Fig. 149 represents a portion of an inlaid border of modern workmanship. Native artists appear to have a natural instinct common to most eastern nations for producing really art works, and they still are gifted even at the present time, when uninfluenced by European ideas, to an extraordinary degree. In modern carving, as in Fig. 150, which is from a carved sandal-wood box in the India

Fig. 149.

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Museum, we perceive the same feeling and artistic delicacy that is found in works executed centuries before our era.

Fig. 150.

When we turn to woven fabrics, for the beauty of which India has been justly celebrated for many centuries, we observe the same fulness and elaboration of ornament that we perceive in their carvings and inlays; added to which their warm and harmonious colouring gives them a quiet richness and charm which is particularly agreeable. In fabric ornament the Indian pine enters more into the designs than almost any other form, and has been worked out in thousands of variations both of minute detail and colour: sometimes by repetition in borders or diaper work, at others as the central feature of an elaborate floral composition.

The outlines of modern Indian ornamentation are often ungraceful, although the filling in is usually extremely rich and ingenious. Plant form is frequently very elegantly conventionalized, especially a branching flower often met with, resembling the carnation, as in No. 12, Plate 25, the whole flower flowing with its leaflets after the manner of a feather. Flowing lines with a repeated conventional flower, as in No. 13, Plate 26, are very characteristic both in modern carving and woven fabrics.

Plate 25.

No. 1. Upright outline ornamentation of conventional forms, which have occasionally a slight resemblance to the classic. Often again filled in with minute detail.

No. 2. Conventional growing ornament.

No. 3. Vase and flowers, arranged after the manner of a branching tree.

Nos. 4 and 5. Foliated sprigs.

No. 6. Superficial pattern, for woven fabric in colours.

No. 7. Pear and heart shaped ornament, with flowers slightly varied from nature.

No. 8. Pine-cone section, for shawl or other woven fabric.

No. 9. Symmetrical and non-symmetrical ornament combined in symmetrical outline, for colour.

No. 10. Symmetrical growing pattern, for raised work or for two colours.

No. 11. Symmetrical disjointed pattern, for raised work, inlay or colour.

No. 12. Flowing feather-formed flower border, for colour.

No. 13. Border of alternating and flowing triple leaf in red and gold.

Plate 26.

No. 1. Cross arrangement of heart-formed leaves, diapered with foliage.

No. 2. Upright branch-leaved ornament.

No. 3. Foliated heart-form symmetrical ornament.

No. 4. Surface decoration growing from central octafoil filled in with cross form and foliage. The star completed by eight lobes of leaf form.

Nos. 5 and 6. Sprigs conventionalized from nature.

Nos. 7 and 8. Upright patterns of symmetrical ornament for coloured decoration or inlay.

Nos. 9 and 10. Flowing and upright borders, for lace or other delicate work.

No. 11. Border to use any way. Red ornament with gold bead or pearled outline upon black.

No. 12. Disjointed diamond border in blue, white, and gold.

No. 13. Flowing wave-line flower and leaf border for carving in low relief or inlay in hard wood, the lines engraved and filled in black.

No. 14. Diagonal bordering filled in with double pine and branched leaves. The following diagonal form to be reversed so as to leave a triangle between filled in with half leaf-form flower.

Nos. 15 and 16. Sprig-form flowers on ornamental forms. Indian detail fits one part into another so that the whole surface is covered with minute form or intricate combinations of colour.

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CHAPTER XIII.

PERSIAN ORNAMENTATION.

PERSIA has existed as a separate and independent kingdom from a very remote period. The conquests of Alexander the Great in ancient times, and those of the Moguls, the Arabs, and the Afghans in times more recent, have each left this ancient kingdom comparatively unchanged,—not from its power of resisting attacks, but from its faculty of absorbing its conquerors; and this long-continued national existence has probably been favourable in developing art among the people, for even before the time of Alexander they had attained a very high degree of perfection in architecture and sculpture.

Art in Persia, as exemplified by the ruins found at Persepolis and its neighbourhood, dates from a very remote age. These ruins are probably nearly of the same age as the works of the Assyrians excavated at Nineveh, and they bear a strong resemblance to the latter.

Persepolis was the favourite residence of some of the ancient Persian kings, and the ruins found there are of great extent. The remains of the palace of Darius and the hall of Xerxes indicate a magnificence and grandeur which must have been unequalled when the buildings existed in their original splendour. In some cases sculpture occurs upon the walls and human-headed winged bulls guard the entrances, which are almost facsimiles of those found in Assyrian palaces. But features have been discovered in the architecture of Persepolis which are not to be found at Nineveh, yet having such affinity of character that what is found in the one place assists in explaining much that is wanting in the other; and this, together with the correspondence in other features, shows conclusively that the styles of Nineveh and Persepolis are one and the same. Among the most important of these missing forms found at Persepolis, are columns which have a double capital formed of the halves of animals, but with bases and other parts which are similar to Assyrian work. The explorations of Mr. Loftus at Susa have laid bare the foundations of a palace almost identical with the palace of Xerxes at Persepolis, and among these ruins have been found columns of a similar character (Fig. 151). Others are again seen in the rock-cut tomb of Darius at Naksh-i-Rustam. This form of capital is also extremely interesting as pointing to the evident origin of the double-headed animal capitals found in the early Hindu temples.

Fig. 151.

For several centuries after the Arab

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conquest, which occurred A.D. 641, there is a complete blank in the architectural history of Persia. Scarcely any examples of work from that period until about the thirteenth century are known to exist. This arises mainly from the circumstance that Persian palaces were built of perishable materials which have gone entirely to decay, the walls being usually of sun-dried bricks, roofed and covered with wood. Among the oldest remains of this period are probably the ornamental glazed tiles with which the domes and walls of the Mohammedan mosques were decorated. The mosques in which this mode of protection and decoration was principally adopted are among the few buildings that remain. In some cases the whole building, both externally and internally, was covered with a perfect mosaic of tiles or glazed bricks, of brilliant colours and intricate patterns. Colour has always been in Persia a more essential element of architectural magnificence than form, and but few examples in any European style of ornamentation can, for richness, be compared with that of Persia during its zenith in the sixteenth and seventeenth centuries of our era.

Fig. 152.—Mosque of Sultan Hussein at Ispahan.

"Persia is in all probability the country from which the Arabs derived the arts afterwards developed by them in Spain and elsewhere. The powerful khalifs of Bagdad no doubt summoned to their court men of science and learning from all the countries under their sway, Persia furnishing them with architects and other artists. Skilled Persian workmen were no doubt employed in large numbers in decorating the mosques and palaces in the Arab capital, situated as it was on the very frontier of their own country. Thence, doubtless, arose the so-called Arabian or Arabesque style of ornament, afterwards so widely spread and now so well known. The peculiar pendant ornamentation of vaults and niches, of which the Alhambra is so typical an example, is identical in style with that used throughout Persia to the present day. Specimens have been found of this species of construction in the ruins of Rhages, a city finally destroyed six hundred years ago. Persia, always an artistic country, could hardly have borrowed it from her rude conquerors."[1]

The most successful epoch of this form of Persian art was during the reign of the great Shah Abbas, which terminated in 1629. His works rendered Ispahan one of the most splendid and magnificent cities of the East. Among these works, by far the most celebrated was the great Maidan or bazaar, with its accompanying mosque and other subordinate buildings. It occupies an immense rectangular area, 2600 by 700 feet; the principal court measures 225 by 170

[1] *Handbook of Persian Art*, by Major R. Murdoch Smith, R. E.

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feet, and is surrounded on all sides by façades in the richest style of Persian polychromatic decoration, the brilliancy of which is almost unrivalled by any other example of its class. The mosque is surmounted by a dome 75 feet in diameter and externally 165 feet high. Of nearly the same period and same style is the mosque of Sultan Hussein at Ispahan, represented by Fig. 152.

The Persian princes showed great taste and splendour in their palaces, but from the character of the buildings they did not admit of so much architectural display as their mosques. They generally consisted of a number of pavilions and detached halls, with trees and gardens connected by covered arcades or long lines of canals, and adorned with elegant fountains. The various parts were frequently of great beauty, and elaborately ornamented, but were wanting in architectural grandeur.

The practice of decorating buildings in Persia by encrusting them with tiles of various patterns, both externally and internally, was very prevalent in early times, and has continued in general use until the present day. Different kinds of tiles, often embracing very elegant geometrical combinations, are also in common use for floors, plinths, and dados in private houses. The impression produced was generally pleasing, and the colouring was often brilliant and extremely effective. The more ancient tiles had a metallic lustre, and parts were sometimes in relief. These were used principally for embellishing the domes and walls of mosques and other sacred buildings. They were in some instances of great size, very elaborate, and having Kufic inscriptions from the Koran.

The smaller uninscribed tiles were commonly divided into various geometrical figures and combinations, as in Fig. 153, which is of an octagonal star form and glazed, the pattern being in chocolate and white. These fit into and are combined with rich dark blue tiles of a cross form, which fill up the interstices left by the star-formed tiles, forming a very agreeable and highly effective pattern. Many of these tiles are as early as the thirteenth century. In other cases the tiles are all kept square, and the figures or geometrical combinations are worked upon the tiles themselves, each tile forming a centre, as in Fig. 154, which is a diagonal cross in dark blue upon a circle and foliage in light green, the ground being white; or the design is carried on, as in the example Fig. 155. The general line on this tile is a frequent one in Persian work, and may be called the alternated tulip pattern. The colours are dark blue and light green, on white ground.

Fig. 153.

Fig. 154.

Fig. 155.

The porcelain of Persia, although not equal to that of China or Japan, is often of great excellence. The Persians valued the works of China highly, for numerous articles are not only imitations but actual copies of Chinese porcelain, and many of them bear makers' marks in Chinese characters. The art of pottery, however, gradually degenerated after the time of Shah Abbas, since whose reign nothing of much value has been produced. The earthenware of the present

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day, as regards both materials and workmanship, is of the commonest description.

That the knowledge of art has been long widely spread among the Persians is shown by the great pains they take to ornament articles of daily use and of little intrinsic value. The form of the object having been decided upon, the whole surface is then covered with elegant ornamentation of various design in low relief. This practice is common to the Moors, Arabs, Indians, and nearly all Eastern nations where the religion of Mohammed prevails, and to the style to which the general term Saracenic art may be applied. An innate artistic feeling appears to follow the course of Mohammedanism, which enables the people to beautify an object without distorting or twisting its shape; a fault which is so common among ourselves, under the mistaken idea of making it more beautiful. All their decoration is flat and unobtrusive, full of ingenious devices both of foliage and figures, and interlaced with the most extraordinary combinations of geometrical lines.

The method of carving *à jour*, that is, pierced, and without a ground, appears to have been long practised in Persia, and is still much employed in the ornamentation of houses and other buildings, particularly for doors and windows, as well as for terrace balustrades and similar works. Pierced ornamental work is also introduced upon carved wooden boxes and other articles. Some remarkable specimens of this work are sherbet spoons carved in pear-tree. They have large flat handles in ornamental pierced work with very deep and thin bowls, which are partly supported underneath and connected with the handle by a kind of keel or rib in carved pierced work. These spoons are made almost exclusively at Abadeh, a large village in the centre of Persia, and the only implement employed in carving them is said to be an ordinary penknife.

Many of the examples of Persian decoration in metal work are as old as the Arab conquest. The art is still practised by the Persians at the present day with very little diminution of its beauty, and the skilful manner in which firearms, sword blades, bits, and stirrups are engraved or damascened is worthy of the highest praise.

The more remarkable examples of ornamentation in metal consist of a great variety of objects elaborately engraved, with foliage and figures, in geometrical divisions, and covering nearly the entire surface, giving the object a very rich and chaste appearance. In this manner are decorated bowls, vases, lamps and lamp-stands, hookahs, incense-burners, and every variety of utensil and vessel to which metal is applicable. These are usually of steel, brass, or copper, and are often also pierced or damascened in silver or gold in addition. The example Fig. 156 is an engraved border from the

Fig. 156.

edge of a bronze basin, the interstices of the ornament being filled in with black varnish. When the intervening spaces between the foliage are cut away, the foliage is arranged with connecting branches so as to support itself. In the example Fig. 157, which

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is from a brass incense-burner, and Fig. 158, from a brass lamp-stand, both from the South Kensington Museum, the black portions are entirely cut out, and engraving introduced upon the flowers or animals where necessary. These are indeed works of very great beauty. In addition to the open work, engraved medallions are frequently introduced, containing hunting scenes and other subjects, as well as inscriptions filled in with black varnish or inlay of silver. The engraved medallions are introduced among the pierced work, as shown by Fig. 159, which is from another brass incense-burner. Many of the minute representations of men, animals, and monsters are highly artistic, and are ingeniously interlaced with foliage and scroll-work, separated by borders and engraved lines, or margins of geometrical or nament or continuous scroll-work.

Fig. 157.

Fig. 158.

Fig. 159.

The people of Persia have long been celebrated for their various kinds of textile fabrics, and more especially for their carpets. The Persian habit of sitting and sleeping upon the ground naturally leads to an extensive demand for fabrics specially made to meet the requirements of that custom. The designs for these articles are very numerous, display a remarkable facility of invention, and usually have an extremely rich and elegant appearance. The conventional combinations of natural flowers and the harmonious arrangements of their colours have caused these fabrics to be much sought after and highly valued by Europeans. Fig. 160 represents a portion of a carpet of simple but good design, having red flowers and green stems, on a white ground. The border lines are of dark brown. Fig. 161 is a conventional form of frequent occurrence, having red flowers and green stem. The flowers are represented in outline without any intermediate filling in.

Fig. 160.

Fig. 161.

In seal and gem engraving the Persians are deservedly famous, and the art is extensively practised on account of the universal Eastern habit of sealing instead of signing letters and documents. At the present day pachas and other high personages in Turkey, Egypt, and other countries, get their seals engraved in Teheran.

In many Persian manuscripts, copies of the Koran for example, the illuminations are very beautifully and minutely worked out. Frequently the first pages and headings of chapters are extremely elaborate, the flowers being usually represented very naturally, and

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in their way are perfect works of art. A number of these manuscripts may be seen in the British Museum and the South Kensington Museum.

The general lines of Persian ornamentation are very similar in character to the Moorish and Arabian styles, modified by a feeling which is peculiar to Persia, and which has again a strong affinity to Indian work. The flora is more natural than the Moorish or Arabian, and figures and animals are of frequent occurrence, there being no restriction as to their use among the Persians. The whole surface of a work—whether it be a building, a piece of metal, or a simple carpet—is often literally covered with ornamentation, no space is left unadorned, and yet no one part is obtrusive or overpowers another. All is in perfect keeping, and no part is crowded or would bear to be omitted. It may be described generally, as being subordinate to the object ornamented, founded on a geometrical basis, and nearly always limited to the decoration of plain surface. These are qualities, however, which are not confined to Persia, but are found repeated in Moorish work, as will be seen by the next chapter.

PLATE 27.

No. 1. Pine-cone flaming ornament. Fire worship has been a wide-spread superstition among the Persians, hence the prevalence of flowing flame form.

Nos. 2 and 3. Conventional scroll engraved borders for metal work, filled in with black varnish.

No. 4. Peacock on inverted vase. The spreading tail is developed by eyes, which would be enriched by the most brilliant colours, the breast of the bird being contrasted by dark blue sheen of greenish hue.

Nos. 5 and 6. Borders of conventional ornament, which have a strong affinity to the Moresque. These would be enriched by various colours, or engraved on metal.

Nos. 7 and 8. Small upright engraved ornaments.

Nos. 9, 10, and 11. Central ornaments for glazed tiles or other works, with natural leaves of the ivy, &c.

No. 12. Ornament for shawl or other textile fabric; the colours being harmoniously blended and intermingled as indicated by lines.

Nos. 13 and 14. Fanciful forms filled with characteristic ornament, allied to the Indian, which it frequently closely resembles.

CHAPTER XIV.

MOORISH OR SARACENIC ORNAMENTATION.

NOT only the elements, but many of the characteristic features of that style of architecture usually called Moorish or Moresque are found spread over the vast extent of country reaching from the shores of the Atlantic to the Bay of Bengal. Known also as Arabian and Saracenic, we find it developed in Arabia, Persia, India, Turkey, Egypt, and Spain; in fact it was the architecture of the Mohammedans modified according to the country in which they settled, just as Gothic was the architecture of the Christians.

Before the appearance of Mohammed and the subsequent establishment of Islamism in

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the seventh century, the Arabians were by no means celebrated for their skill in architecture. But the extraordinary conquests from the Indus to the Nile under the Caliph Omar the First, A.D. 636-44, brought the victorious Moslems in contact with nations much more civilized than themselves; and as their empire extended, their love for the arts and sciences increased. The ancient city of Damascus, which became the seat of the empire, was considerably enlarged and vastly improved. Among its numerous splendid buildings was the celebrated mosque founded by Alwalid II., who introduced the *minaret*, which, though an innovation at the time, seems in later years to have been as necessary a portion of the mosque as the main body of it. Great, however, as these works were, the removal of the seat of the empire to Bagdad, on the western frontier of Persia, gave an impulse and a lustre to Arabian art which almost surpasses belief. The powerful caliphs of Bagdad summoned to their court men of science and learning from all the countries under their sway, Persia furnishing them largely with architects and other artists. Skilled Persian workmen were doubtless employed in large numbers in decorating the mosques and palaces in the Arab capital, situated as it was on the very frontier of their own country. This extraordinary city, which was founded in A.D. 762, remained the imperial seat of these Arabian caliphs for a period of five hundred years.

The Moors were originally the people inhabiting Mauritania in Northern Africa, corresponding to the modern empire of Morocco and part of Algeria. For a time they resisted the progress of the Arabian conquerors, but were finally overcome about 650 A.D. In 711 the Moors from Africa invaded Spain, and in a few years the greater part of that country fell under the Moslem yoke. Scarcely a town in Spain that was occupied by the conquerors but retains still some traces of their architecture, although many examples have disappeared from the effects of time or from the ruthlessness of their successors in power.

The most interesting example of early Moorish architecture in Spain is the mosque of Cordova. It was commenced in the year A.D. 786, and was enlarged and ornamented at various subsequent periods, so that it contains examples of all the styles employed by the Moors in Spain from the earliest times. It is a low building of immense size, and covers a larger superficial area than that of any Christian church except St. Peter's at Rome. The sanctuary of the mosque, erected in 965, is formed of white and coloured marbles, beautifully enriched with true mosaic work, and is one of the most beautiful specimens of the Moorish style in Spain. A mosque, now the Church of S. Cristo de la Luz, and many other Moorish works of a very interesting character, exist at Toledo.[1]

In 1236 the kingdom of Granada was formed, and the royal palace and fortress of the Alhambra was commenced in 1248 and finished about 1314. This is perhaps the most perfect model of Moorish architecture which has ever existed. Other phases of the style are to be found in the mosques of Cairo, India, and Constantinople —indeed wherever the religion of Mohammed has been planted.

The Moorish was not a stone architecture, but was mostly composed of brickwork

[1] See *Gothic Architecture in Spain* by G. E. Street, R.A.

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covered with tiles or ornamented stucco. As has been said it was evidently derived in great measure from the Persian, although many of its early characteristics were no doubt Byzantine. In accordance with what appears to have been the prevailing mode of decorating their works throughout all Eastern nations, it was an incased style, handed down probably from traditions of the sculptured and incased walls of Assyria, Babylon, and Persepolis. The forms of its architecture, when stripped of surface enrichments, are very simple. The dome was one of its leading characteristics, and formed a graceful and highly enriched feature in a Moslem mosque. The minarets used in calling the faithful to prayers are equally distinctive, and possess an elegance of style and completeness of construction which render them, perhaps, the most beautiful form of tower architecture that has ever been invented. But the most striking and distinguishing feature of Moorish or Saracenic architecture is the horse-shoe form of arch. This is an almost invariable accompaniment of the style, and serves to distinguish it from all other styles or modes of construction, in whatever country they are found. The horse-shoe arch is commonly of a semicircular form, but somewhat more than a semicircle, and therefore narrower at the springing than above, as in the doorway shown in Fig. 162. Examples of it, however, are frequently found pointed at the apex, after the manner of Gothic arches. Other examples are further developed into cusps of a trefoil or cinquefoil form. Later, as in the Alhambra, they became formed into a numerous succession of cuspings, each cusp being again frequently trefoiled, giving the whole arch a very rich and elegant appearance. Columns in this style were usually slender (as shown in Fig. 163), and the ornamentation of their capitals was extremely varied.

Fig. 162.
Moorish Doorway in Cordova.

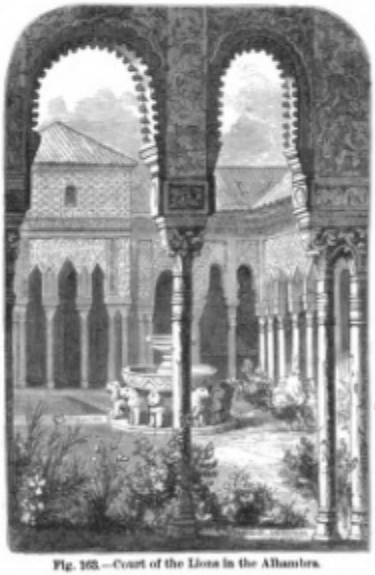

Fig. 163.—Court of the Lions in the Alhambra.

Beyond the various forms of the arches and columns there are scarcely any mouldings, but an immense variety of effect is obtained by corbelling in pendentives for supporting the angles of domes, the principles of which are well worthy of being attentively studied. The system is peculiar to the Arabians and Moors, and has no analogous feature in any other style of architecture. It has been, most appropriately, called stalactite work, and it is remarkable both for its beauty and for the simple means by which it is produced.

The examples in the Alhambra, as described by Owen Jones, are composed

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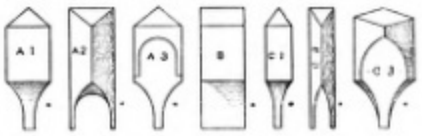
of numerous prisms of plaster, united by their contiguous lateral surfaces, consisting of seven different forms proceeding from three primary figures on plan. They are the

Fig. 164.

Fig. 165.



right-angle triangle A, Fig. 164, the rectangle B, and the isosceles triangle C. In these, *a-a*, *b-a*, and *c-a* are equal; *a-b* is equal to *b-b*, and the vertical angle of the isosceles triangle C is 45°. The figure B has one form (Fig. 165) in section; the figure A three; and figure C three, the third (C 3) being a rhomboid, formed by the double isosceles triangle C (Fig. 164). The curves * * * (Fig. 165) of the several pieces are similar, by which it will be seen that a piece may be combined with any one of the others by either of its sides; thus rendering them susceptible of combinations as various as the melodies which may be produced from the seven notes of the musical scale.

Fig. 166.

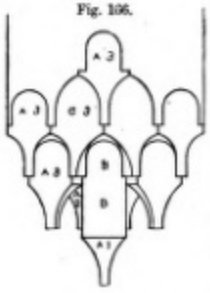
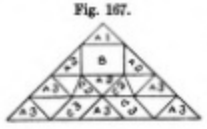


Fig. 167.



With these stalactite plaster bricks the Moors formed cornices, arches, domes, and pendentives with the greatest facility. Figs. 166, 167 show the plan and elevation of a pendentive composed of the seven pieces by which a square form, such as a room or lantern, may become an octagon above.

The Moors invariably attended to what ought ever to be the first principle in architecture—*that construction should be the origin of all decoration.* Not only does the decoration arise naturally from the construction, but the constructive idea is carried out in every detail of the ornamentation. Their general forms were first cared for, these were subdivided by general lines, the interstices were then filled in with ornament, which was again subdivided and enriched for closer inspection.

The geometrical combinations in their ornament are something wonderful; a vast variety of examples of these will be found in Owen Jones and Goury's magnificent work on the Alhambra, as well as in the *Grammar of Ornament* by Owen Jones. Many of their geometrical forms run upon the fret, of which Fig. 168 is a characteristic example. No. 9, Plate 29, also shows how the fret form was carried through a diaper. In borders the foliage was frequently of an upright character, as in Fig. 169.

Fig. 168.

Fig. 169.

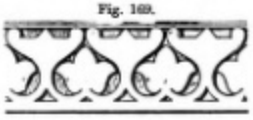
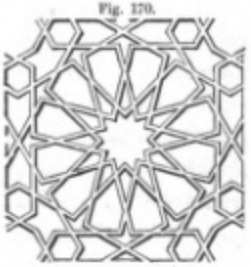


Fig. 170.



Another elementary form frequently adopted, and which was worked out in a variety of different ways, was the star shape,

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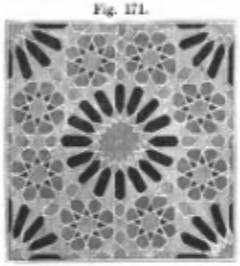
sometimes called the "star of Solomon," Fig. 170. These frequently exhibit the utmost exuberance of fancy, and when united to the multiplicity of forms in their foliage and other combinations offer a wide and interesting field for study. They contain innumerable hints and suggestions for design, which cannot fail to be of the utmost value to those who are in search of materials from which to elicit new beauty and elegance in ornamentation. Combinations of the star form are also worked out with great elaboration in glazed tiles for mosaic pavements and wall decoration. Fig. 171 presents an example of the latter from the Alhambra, the colours being blue, green, buff, yellow, and purple, separated by white lines.

Fig. 171.

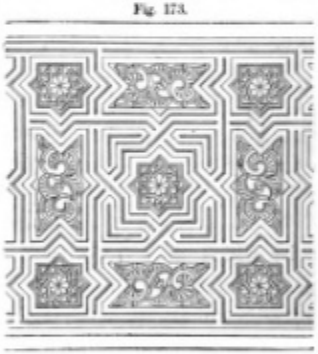


Moresque ornamentation is very much confined to the decoration of surface. But although literally covered with intricate form, embracing lines of the greatest elegance and beauty, the ornamentation is so subordinated to the object itself, whatever it may be, that no part can be said to be over-ornamented—all is properly subdued, and no part is more prominent than another. We find this principle so invariably adhered to in Eastern art, and it is one so necessary to all truly artistic work, that the attentive student would do well to pause and consider its importance. It gives a character and charm to all Mohammedan work, which may be sought for in vain elsewhere, unless this simple principle upon which the Orientals proceed has been fully understood and adhered to.

The decorative forms used for surface work are usually double,—that is, the main lines are geometrical combinations of interlacing straight lines, and formed of two fillets; while the filling-in, or secondary forms, are interlacing curved lines of foliage, with centres of star forms at intervals, as in Fig. 172, from the Alhambra. There is also a very slight difference in the planes of the two systems, the surface of the foliage being kept slightly lower than that of the fillets. Frequently there is a third species of ornamentation, which is introduced upon the leaves of the foliage itself, as indicated on Fig. 173, from a ceiling in the Alhambra.

Fig. 172.

Fig. 173.



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This latter system was sunk out of the second, and flowed across the leafage, as the divisions do in feathers, or the veins of leaves in nature. An acorn form is of frequent occurrence as a starting-point, and ties or bands across the stems are often introduced. The forms may be but slightly taken from nature, but one line is made to flow and fit into another so gracefully and yet so naturally, that it becomes plainly evident that natural principles have been closely adhered to although literal form has not.[1]

In the natural leaf we can trace very distinctly how beautifully all the central riblines radiate from the parent stem; how each leaflet diminishes towards the extremities, and how each area is in proportion to each leaflet. It is this subordination of line upon line and form upon form, which is only an adherence to natural laws, that the Orientals carry out with marvellous perfection —which invariably gives their compositions such grace and elegance.

In their system of colouring the Moors adopted certain fixed principles. They always used colour to assist in the development of form and as a means of bringing out the constructive features of a building. In this they followed the guiding inspiration of nature. For example, flowers are separated by colour from their leaves and stalks, and these again from the earth in which they grow. So also in the human figure every change of form is marked by a change of colour; thus the colour of the hair, the eyes, the eyelids, and lashes, the sanguine complexion of the lips, the rosy bloom of the cheek, all assist in producing distinctness, and more visibly bringing out the form. Had nature applied only one colour to all objects, they would have been indistinct in form as well as monstrous in aspect.

The colours employed by the Moors on their stucco-work were in all cases the primaries, *blue*, *red*, and *yellow* (*gold*). The secondary colours, *orange*, *green*, and *purple*, occur only in the tiled or mosaic dados, which, being near the eye, formed a space of repose from the more brilliant colouring above. During all early periods of art, as amongst the Egyptians and the Greeks, the primary colours were nearly always exclusively employed; whilst, during the decadence, the secondary colours became of more importance. Thus, in Egypt, in the Pharaonic temples, we find the primary colours predominating; in the Ptolemaic temples, the secondary. So also on the early Greek temples we find the primary colours, whilst at Pompeii every variety of tone and shade was employed.

With the Moors, as a general rule, the primary colours were used on the upper portions of objects, the secondary and tertiary on the lower. In using the colours *blue*, *red*, and *gold*, they took care to place them in positions where they could be well seen, and where they would add most to the enrichment of the general effect. In the depths of moulded surfaces they placed *red*, the strongest colour of the three, where it might be softened by shadow, never on the surface; they placed *blue* in the shade, and *gold* on surfaces exposed to light. It is evident that by this arrangement alone could the true value of the colours be obtained. The several colours were either separated by white bands, or by the shadow caused by

[1] It is a peculiarity in this style, that no animal form is ever found, and even the foliage is very unlike anything which is to be observed in nature. This arises from the imitation of animals, and even that of foliage, being forbidden by the Koran.

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the relief of the ornament itself;—and this appears to be an absolute principle required in colouring—*colours should never be allowed to impinge upon each other.*[1]

The Moors were long celebrated for the manufacture and artistic decoration of arms and armour. Among the productions of this kind none were more justly famous or more delicately worked than swords, and the sword manufactory of Toledo acquired great celebrity from the perfection with which the blades were tempered. The most noteworthy specimens of this work now existing are the sword, dagger, and double-handed sword which belonged to Boabdil, the last king of Granada, now in the possession of the Marquis of Villaseca, at Madrid. The sword is 39 inches long, has a Toledo blade, and the hilt is formed of solid gold enamelled in blue, white, and red. The dagger is of great artistic merit. The hilt is of iron ornamented with ivory delicately engraved in arabesque. The blade is damascened in gold with Cufic inscriptions on each side. The scabbard is most beautiful. Its chapes are made of silver enamelled in green, and the remainder is of crimson velvet embroidered in gold, from which hangs a fine tassel of silk and gold thread. A small eating knife is fitted into this same scabbard, but it possesses no artistic merit. The double-handed sword has an iron cylindrical hilt, inlaid with ivory, and on it appears the motto of the Kings of Granada, "God alone is the Conqueror," in Cufic letters.

The helmets used by the Spanish Moors were similar in form to those of the Christians, but the shields were more varied. They were generally round, formed of wood or thick cow-hide, and were decorated outside in a variety of ways, sometimes with pierced iron plates, or bands of leather forming arabesques; and at other times with an ornamentation of iron, and leather embroidered with gold and silver, with rich hanging tassels and pendants.

The Moorish style as applied to furniture is sometimes found in Spain, in combination with the Gothic. A very remarkable specimen of this combination of Moorish and Christian art exists at the Academia de la Historia, Madrid, consisting of a triptych of very large dimensions, formerly in the church of the Monasterio of Piedra in Arragon. When the doors are closed six compartments appear on each, surrounded by a border headed by a wide cornice. This cornice is divided in sixteen spaces formed by arches adorned by stalactite ornamentation in the Moorish style; inside each span is painted the figure of a saint; there are also subjects from the life of our Lord. The border which surrounds these doors is formed of a beautiful geometrical ornamentation in the purest oriental style, while in the upper and lower parts are inscriptions in Gothic characters with the date 1390.

Another interesting specimen of this combination of styles is a recess or cupboard of the fourteenth century, now in the South Kensington Museum, and formerly in the court of an old house at Toledo. It is 5 feet 4 inches high by 8 feet wide; and is composed of an outer arch, with the tympanums ornamented with fine arabesques in relief, made of stucco. The arch is surrounded with two Latin inscriptions in Gothic characters; and it forms the

[1] This account of the method of colouring pursued in the decoration of the Alhambra, is condensed from Owen Jones.

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opening to the cupboard, which is about a foot deep, and is divided into two compartments with two rows of shelves. Each of these is supported by a series of Moorish arches, the tympanums of which are ornamented with tracery, or an ornamentation of leaves in a geometrical and oriental manner. On the lower shelf is a Spanish inscription in Gothic characters.

Plate 28.

No. 1. Interlaced ornament with foliage.

Nos. 2 and 3. Upright borders—interlaced fret, and foliage with interlaced form.

No. 4. Symmetrical flowing form. It is a common characteristic feature in Moorish ornament for one form to be flowing round and fitting in to fill up the interstices left by another form.

Nos. 5 and 6. Small symmetrical ornaments.

Nos. 7 and 8. Outline centres of foliated and interlacing form.

Nos. 9 and 10. Flowing, angular, and interlaced terminals.

No. 11. Geometrical diaper.

No. 12. Interlaced square and diagonal design, with cross-form foliage in the centre.

No. 13. Interlaced geometrical design for tile flooring or parquetry.

No. 14. Interlaced outline ornament.

Plate 29.

No. 1. Arabesque pierced stone battlement inlaid with flat foliage.

Nos. 2 and 3. Upright ornaments, honeysuckle and pine.

No. 4. Geometrical and foliated centre ornament. Form laid upon form.

No. 5. Cross-form pine ornament.

No. 6. Eight-pointed star filled with radiating foliage, in oval or vesica; the intermediate space being diapered with pointed ogee line from star, and foliage.

Nos. 7 and 8. Oblong centres for panel decoration in colour.

No. 9. Interlaced fret tile pattern. There is a great variety of patterns, somewhat similar to this, to be found in the wall decoration of the Alhambra, all formed by the intersection of equidistant lines, and which, Owen Jones observes, could be traced through the Arabian to the Greek fret. A peculiarity, however, which the Moorish fret possesses is the addition of the diagonal line, without which the power of interlacing would be greatly limited.

No. 10. Flowing foliated upright form for colour or engraving.

No. 11. Panel in low relief for colour with shield surrounded by foliage. The Moors occasionally introduced the shield charged with armorial bearings, but not very frequently. The elaborate diapers and other designs on the walls, and other parts, in the Alhambra are all worked in low relief in plaster and afterwards picked out in colour and gold.

Plate 30.

No. 1. Upright flower interlaced with geometrical trilobed line.

Nos. 2 and 3. Conventional foliated forms with semi-conventional leafage.

No. 4. Pointed quatrefoil centre filled in with foliage.

Nos. 5 and 6. Damascene ornaments for metal.

No. 7. Geometrical superficial ornament for colour or inlay.

Nos. 8 and 9. Geometrical outlines for diapers, which may be further filled in with foliage according to the scale of the work or the degree of richness required.

No. 10. Arabian scrolls working one into the other, as is so frequently the practice in the style.

No. 11. Disjointed interlacing ornament.

Nos. 12 and 13. Oblong panel decoration formed with flowing and interlaced line and heart-form centre filled in with foliage. The two sides varied.

Plate 31.

Nos. 1 and 2. Oblong panel formed with interlaced fret-form square centre, carried into scroll foliage. Two sides varied.

Nos. 3 and 4. Terminal flowers. Conventionalized harts'-tongue leaf and honeysuckle.

No. 5. Centre ornament for panel in low relief, and colour, interlacing foliated forms.

Nos. 6 and 7. Geometrical upright diapers for paper or wall decoration.

Nos. 8 and 9. Interlacing arabesque foliage, for colour and slight relief.

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No. 10. Double triangle in circle, interlacing with hexagonal form and circles.

Nos. 11 and 12. Interlaced square and diagonal lines, with foliage for diaper or panel decoration.

These designs do not follow literally the principles found in Arabesque ornament, but are intended to suggest the application of a few of their ingenious and beautiful lines to the purposes of modern ornamentation.

CHAPTER XV.

BYZANTINE ORNAMENTATION,

WITH NOTICES OF ROMANESQUE AND CELTIC.

WE here employ the term Byzantine in its most extended sense, as including what is usually denominated Romanesque art. Out of these two great divisions certain sub-styles are considered to have arisen, as the Lombardic, our own Norman, and perhaps the Celtic or Irish, the last of these being principally exemplified in illuminated manuscripts, stone crosses, and similar works.

The Byzantine form of architecture originated in the ancient city of Byzantium or Constantinople, which upon the division of the Roman Empire became the seat and capital of the Eastern or Greek Empire. It has, therefore, in many of its minor details, an evident Greek origin. The Romanesque, as its name indicates, arose out of Roman architecture; it spread throughout the whole of Europe, and was much more extensively adopted than the Byzantine. There was, however, a charm, a greater richness and a beauty, about Byzantine art that produced a strong undercurrent in its favour. Its influence was almost universally felt, and from the fourth to the twelfth centuries Byzantine art was eagerly sought after, and it was a style largely employed in those countries professing the Greek form of the Christian religion.

When Constantine, the first Christian Emperor of Rome, removed the seat of empire from Rome to Byzantium, about A.D. 330, he determined that his new capital should stand without a rival for magnificence and beauty. In this view he carried with him as far as possible all the arts of Rome, and also encouraged the employment of Greek artists, inviting them to Byzantium, as well as others from Persia, or from whatever country the highest talent could be obtained. Thus originated that combination of Roman, Greek, and Oriental architecture which has been denominated Byzantine.

The most important period of this style was the time of Justinian, who ascended the throne A.D. 527. He was a great builder of churches, and erected the celebrated Church of St. Sophia as well as others at Constantinople. Contemporary with the erection of St. Sophia was that of San Vitale at Ravenna,

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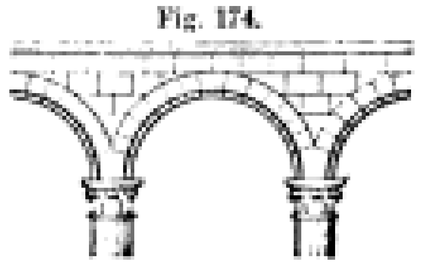
which was founded by the piety of Julian, the treasurer of Justinian. From the time of Constantine to that of Justinian there appears to have been no marked difference between the architectural styles of the Eastern and Western Empires, but with Justinian a distinct separation of the empires took place, which induced a decided difference between their styles of architecture. Continued disputes were maintained between the East and West, and differences in the forms adopted in the arrangement of churches became strongly marked. The Greek cross inscribed within a square and surmounted by a dome, with four smaller domes over the arms of the cross, was the typical plan adopted by the Byzantines; while the form of the Latin cross, founded upon the old Roman basilicas, and terminating with a circular apse, was the plan adhered to by Rome.

Existing buildings of purely Byzantine character are few and isolated, although Byzantine features may be distinguished in many. In Venice the style was carried out in all its purity, and the grand Church of St. Mark, commenced in the tenth century and erected by Byzantine architects who had been invited from Constantinople, remains one of the finest monuments of the style.

The most prominent feature in the Byzantine and Romanesque styles, distinguishing them strongly from the antique Greek and Roman, was the universal adoption of the semicircular arch, and the entire omission of the classic entablature. The arch was made to spring immediately from the capital itself without the intervention of the entablature (Fig. 174). This had been done previously by the Romans in some of their latest works, as in the palace of the Emperor Diocletian at Spalatro, but it did not become the universal practice until a later period. This mode of employing the arch without an entablature produced a complete revolution in architecture. In the Romanesque it led to the development of vaulting and groining, and in the Byzantine to the extended use of that most beautiful of all architectural features the dome.

Fig. 174.



From the sixth to the twelfth centuries Greek taste was held in the highest esteem in Constantinople and throughout the East. Thence were distributed over Europe numerous works of ornamental art, which were eagerly sought after, such as richly woven and embroidered stuffs, wood and ivory carvings, ornaments in gold and other metals; enamels and paintings on panel, and many other objects of Byzantine art. Numbers of these were brought to this country by crusaders returning from the Holy Land, or by traders from Venice and other eastern cities. These were justly esteemed treasures of art, and became objects of admiration and examples for imitation among our native artists.

When the separation between the Eastern and Western Churches occurred, and their architectural styles diverged, a marked difference naturally followed in the various architectural details. The Byzantine foliage was strongly tinged by a Greek feeling, and preserved much of the sharp zigzag outlines of the antique acanthus leaf, Fig. 175; the Romanesque, on the contrary, followed the soft rounded lobes of the leafage of the Roman capitals, Fig. 176.

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A distinctive and characteristic feature in Byzantine foliage, and one which may be plainly traced in many examples of our own Norman work, is its being nearly all carved with a V section from out of the surface of the stone: also a peculiar fitting together of the points of the leafage, so as to leave scarcely any portion of the ground to be seen, as in Fig. 177, which is a large carved stone bead or string course from the Church of St. Sergius at Constantinople. The anthemion ornament of the Greeks, carved after the same manner and arranged in a heart-form, is of frequent occurrence, and is thus found used as a string-course or as the abacus to capitals in many of our Norman buildings. Fig. 178 is the heart-form anthemion ornament as found at Constantinople, and examples almost identical may be observed in this country. These are plainly reminiscences of the antique Greek foliage, retaining the sharp zigzag outline and simple V section of surface, as in Fig. 175, as distinguished from the round-lobed foliage of the Roman period, Fig. 176. This sharp form of foliage indicates the employment of Greek artists during the early development of Byzantine architecture. A favourite arrangement of the heart-form enrichment, frequently met with in early Greek churches, was that in the form of a cross, as in Fig. 179 from St. Mark's at Venice. Occasionally carvings are found which are evidently direct imitations from nature, and indicate a desire to depart from the more ordinary conventional foliage, as in the example Fig 180 from the same church.

Another important and distinctive feature in Byzantine art was the covering the walls with gorgeous mosaics, executed in colours on gold grounds, representing colossal figures of the Deity, and of saints, apostles, and prophets. Glass mosaic formed in small geometrical patterns in gold and colour was also of frequent occurrence in borders, panels, and other minor details. Of these Fig. 181 from St. Sophia, and Figs. 182, 183 from the Church of St. Francis at Assisi, represent some of the most simple

Fig. 175.

Fig. 176.

Fig. 177.

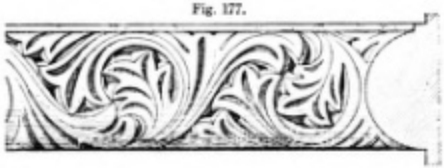
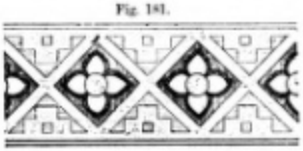


Fig. 178.

Fig. 179.

Fig. 180.

Fig. 181.



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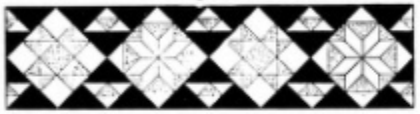
forms. This beautiful mode of decorating wall surface with a profusion of mosaics in gold and colours forms one of the most lovely and imposing features of the Byzantine style of

Fig. 182.

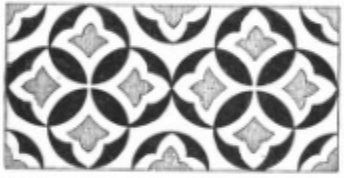


architecture. In St. Mark's at Venice the whole of the vaults and domes are literally

Fig. 183.

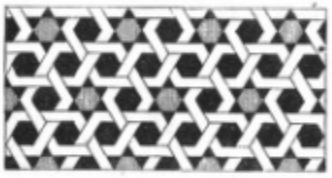
covered with gorgeous colour in this imperishable material.[1] Floors were frequent-

Fig. 184.



ly inlaid with marbles of the most costly description. Fig. 184 is an example from

Fig. 185.



the Duomo at Florence, and Fig. 185 from St. Mark's at Venice.

[1] "The apse of St. Mark kindled by the western sun into one blaze of gold, fairly rivals the storied windows of Rheims in all the glory of the same happy moment. How much the unrivalled effect of St. Mark's is due to the gorgeous mosaics is best felt by comparing it with such a church as that of St. Anthony at Padua, where the domes—of no contemptible design, at least within—cry aloud for the same kind of relief to their bareness and whiteness."—*Historical and Architectural Sketches*, by E. A. Freeman, D.C.L., LL.D.

The Byzantine and the Romanesque, however, embrace other versions of the round-arched style besides those of Constantinople, Ravenna, and Venice. Of these the Lombardic is justly celebrated. San Michele at Pavia, San Thomaso near Bergamo, and many other churches of Northern Italy, are existing monuments of this style; the Baptistery at Florence was also built under the Lombard dynasty. It is from this Lombardic branch that we obtain more immediately much of our own Norman version of the Romanesque.

Another element that became mixed up with Byzantine and Romanesque architecture was the Celtic form of ornamentation, the origin of which is most mysterious, and its ramifications among the earliest forms of mediæval ornament very remarkable. Wherever the Northmen went—whether Goths, Ostrogoths, Visigoths, Huns, or by whatever name the numerous barbarous tribes which overran Europe in the fourth and fifth centuries may have been called—there, remains of this peculiar ornamentation are to be found, strangely mingled with forms clearly traceable to a classic origin. It has been sometimes termed "Runic," a name derived from the Scandinavian word *rune*, a mystery; but is better known as Celtic. The influence of this style of ornament not only extended to Italy, France, and England, but it was, as far as can be ascertained, the indigenous style throughout Scandinavia and the Isle of Man, but more especially so in Ireland.

Whether the Celtic or Runic style was really derived from the Byzantine is impossible now to discover. Most probably it arose independently of it. But there can be no doubt that it had a decided influence

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upon many of the later forms of Byzantine and Romanesque work. The character of Celtic ornamentation may be clearly distinguished in the many beautiful and highly interesting stone crosses which still exist in Ireland. The enrichments on these consist "of interlaced ornaments, bands, cords, serpents, birds, and even human beings, weaved and interlaced in the most intricate manner; vegetable forms are very rare."[1] The same character of elaborately interlaced and knotted ornament is also found in the ancient and beautifully illuminated manuscripts for which Ireland is justly celebrated, as well as in the Anglo-Saxon manuscripts, which are very similar in style to the Irish. The oldest of these Celtic manuscripts date from the sixth century, and exhibit a series of entirely original features in the extraordinary illuminations with which they are decorated. No manuscripts require for their execution greater truth and delicacy of hand than some of these Irish productions, more particularly such as the "Book of Kells"—which tradition asserts to have belonged to St. Columba himself, and which is now preserved in the library of Trinity College, Dublin. "The leading elements of the ornament in these manuscripts are interlacing bands, terminating in spirals coiled eccentrically one within another, and interweaved birds and animals struggling as if in interminable contest."[2] All therefore are of the same general character as the ornament found on the crosses.

Examples of this peculiar form of ornamentation, as found in the Irish and Anglo-Saxon manuscripts, are given in Plate 32, Nos. 2, 3, 4, and Nos. 2 and 3, Plate 34.

[1] O'Neill's *Crosses of Ireland.*

[2] Sir M. D. Wyatt, *Trans. Royal Inst. Brit. Archts.* 1860.

An example, forming a portion of a letter from an illuminated manuscript in a later style (the twelfth century), is given in Fig. 186, and shows the use of animal form interlacing with straight lines.

Fig. 186.

An interesting development of the Celtic or Runic style of ornamentation is found among the wooden churches of Norway. Although these churches do not date so early as the Irish manuscripts, still the same feeling in treatment and the same interlacing of animal form in long strap-like lines are discernible in both. Fig. 187 is an example carved in pine from a wooden church of the eleventh or early part of the twelfth century at Sauland, in Norway. It has, as will be noticed, an admixture of foliage which is seldom found in Irish examples, but which is met with in our own Norman churches. Numerous examples of this admixture might be cited from various parts of the country, but one (Fig. 188) from the south door of Iffley Church, Oxfordshire, will be sufficient to indicate the resemblance. In both examples it will be observed that the animals are biting the strap-foliage, and that the stems are beaded or pearled, a common form of enrichment in all Norman

Fig. 187.

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ornament. Pearling also occurs in the Irish manuscripts, where the ornament is frequently inclosed by bounding lines of closely-serried minute red dots

Fig. 188.

The constant introduction of interlacing animals and other forms had no doubt a connection with serpent worship, and may probably have originally been derived from India. No worship was more common among the heathen Danes and Northmen than that of the serpent, and they retained a strong attachment to their ancestral faith long after they became nominally converted to Christianity.

M. Viollet le Duc, in noticing similar strange examples of sculpture at Saintonge and Poitou, observes that "these influences, we believe, are in part due to the forced relations which the country has had, from the tenth century, with the hordes designated by the name of Northmen, and who ceased not, during nearly two centuries, to infest the western coasts of France. Now these Anglo-Saxon manuscripts, executed with a rare perfection, present to us again this strange ornamentation." Of another example he further remarks, "These animals of the pillar at Souillac, which bite one another and are matted and twisted together, are met with neither in Gallo-Roman sculpture nor in the Græco-Roman painting or sculpture of Syria. To find any analogy to this art it is necessary to recur to Scandinavia, Northern Europe, or to the Anglo-Saxon manuscripts of London."[1]

The same influence extended to Italy, as is seen in the striking resemblance between the doorways of some Italian churches and those of old churches in Norway. Indeed the style of the doorways of many of our own churches—as the Monk's and Prior's Entrances at Ely Cathedral—evidently shows that in the mind of the English as well as the Italian sculptor a strong Scandinavian feeling must have existed. In addition, therefore, to a Greek and Roman influence in Byzantine ornamentation, there is frequently a blending of the intricate interlacings and peculiar features of the Celtic or Scandinavian type, which sometimes gives to it a compound character, and makes it difficult or impossible to say from what source much of it is taken;—still there are generally certain broad characteristics, with remains of classic treatment, that mark the style with tolerable distinctness.

All our Norman churches, cathedrals, and other remains, which are distinguished by having semicircular arches, belong to the Byzantine or Romanesque style, although the style is modified by the introduction of other features. The purest example of the Romanesque in this country is the choir and Trinity Chapel of Canterbury Cathedral, the foliated capitals of which are very perfect specimens of the Romanesque modification of the classic Corinthian. It should be noticed that at Canterbury, and in several other examples which are late in the style, many of the arches are pointed, although

[1] *Dictionnaire Raisonné de l'Architecture Française*, by V. le Duc, article "Sculpture."

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only slightly so; thus foreshadowing, as it were, the great alteration which was about to take place. To show how nearly, in point of time, the round-arched style approached the Gothic, it may be mentioned that the work at Canterbury was not completed until the year 1184, and yet Lincoln Cathedral was begun to be rebuilt in the Early English style in 1186.

Among the arts which were brought to great perfection by Byzantine artists was that of enamelling. The enamel was often made in small pieces and applied as precious stones are, and attached to the object to be decorated. Many fine pieces of enamel, however, were complete in themselves. Unhappily, owing to the value of the pure gold of which so many of the finest examples of sacred vessels and royal ornaments, arms, and plate were made, very few Byzantine enamels are now in existence.

Carving in ivory, which descended from the Greeks, was also an art much practised during the early Byzantine period. One of the most celebrated relics of this class is the throne or chair of Maximian, Archbishop of Ravenna, which was executed about the middle of the sixth century. It is now preserved among the treasures of the Cathedral at Ravenna, and is engraved in the great book of Du Sommerard. It is entirely covered by plaques of ivory, arranged in panels carved in high relief, with scenes from the Gospels and figures of saints. The borders and intermediate spaces are filled with foliated ornaments; birds and animals; and flowers and fruits. From the time of Charlemagne ivory was more and more used for the decoration of ecclesiastical furniture, especially for the covers of books, reliquaries, pyxes, retables, episcopal combs, croziers, and pastoral staffs. Beautiful and highly interesting examples of Byzantine carvings in ivory, exemplifying great skill both in the workmanship and design, are to be found in our museums, and will amply repay close examination and careful study.

Plate 32.

No. 1. Interlaced cross-form in square, for execution in low flat relief. Byzantine.

No. 2. Celtic initial letter I, after the manner of the Anglo-Saxon manuscripts, with skeleton animal.

No. 3. Interlacing pearl-work, with nail-head border. Norman or Celtic.

No. 4. Double bird and scroll work, somewhat after the manner of the Anglo-Saxon manuscripts. To be worked in gold and colour.

Nos. 5 and 6. Circles containing cockatrice and stag, eccentrically twisted.

No. 7. Band of interlaced ribbon and foliage.

Nos. 8 and 9. Interlaced geometrical combinations for inlay.

Plate 33.

No. 1. Dragons in low relief for the tympanum of a doorway of Anglo-Norman character, interlaced in the Celtic manner. The two sides are varied.

No. 2. Diaper in low relief and picked out in colour, finishing with cresting upon top.

No. 3. Emblematical form of fish, eagle, and serpent united—a symbol of Christian evangelism.

No. 4. Cherubim with heads formed of the emblems of the four evangelists. Wings covered with eyes to symbolize the all-seeing presence of the Deity.

No. 5. Upright ornament with interlaced animal form.

No. 6. String-course of bird monsters forming scrolls. Anglo-Norman or Celtic.

No. 7. Frieze of sharp-lobed Byzantine foliage, arranged in the manner of the Greek anthemion ornament. Many varieties of the anthemion ornament are to be found in Byzantine ornamentation. A heart-form arrangement, evidently upon the same type, is of frequent occurrence. See Fig. 178.

No. 8. Interlaced star-formed frieze. These star patterns are sometimes found in the Byzantine, but

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are more frequent in Moorish work, in which they are sometimes carried out in the most intricate manner. The animals' heads indicate that the work is Byzantine, as animal form is never introduced in the Moorish.

Plate 34.

No. 1. Norman bas-relief, having the Celtic character of interlacing long-necked animal form with foliage.

Nos. 2 and 3. Foliated animal form in the Celtic manner, as found in Anglo-Saxon manuscripts.

No. 4. Alternating fret-formed diaper for colour or low relief. Forms of a similar character are found sculptured in low relief on the Irish crosses.

Nos. 5 and 6. Borders or string-courses, in upright formed design of Byzantine or Romanesque character.

No. 7. Double dragon scroll of Celtic or Irish character.

Nos. 8 and 9. Drop and final ornaments.

No. 10. Byzantine foliated enrichment for execution in low relief.

No. 11. Cross heart-form panel for painting.

No. 12. Panel for painting or inlay. Diamond and semicircles interlaced.

CHAPTER XVI.

GOTHIC ORNAMENTATION.

FOLLOWING the round-arched or Romanesque style of architecture, there arose the style termed Gothic, which is distinguished principally by the general use of the pointed arch. Originally when the opprobrious name "Gothic" or barbarous was given, it embraced the whole of the architecture of the middle ages, including the Saxon and Norman of our own country; but now it is found more convenient to limit the application of this term to the Pointed style.

In our own country the development of the Gothic style commences about the end of the twelfth century, and the style continues in use during the thirteenth, fourteenth, fifteenth, and part of the sixteenth centuries. This period is divided into Early, Middle, and Late Gothic; or, according to the more technical language now in use, into Early English, Decorated, and Perpendicular. The Early English style lasted throughout the thirteenth century, and included the long reign of Henry III. The Decorated principally occupied the fourteenth century, and answers pretty nearly to the reigns of the three Edwards. The Perpendicular was the style of the fifteenth century, and was carried also partly into the sixteenth century.

These three divisions also answer pretty nearly to the terms used in France, namely, "*Style ogival primitif*," "*Style secondaire*" or "*Rayonnant*," and "*Style tertiaire*" or "*Flamboyant*." But the French terms apply to periods rather earlier than ours—the *Style primitif* commencing about fifty years before the Early English.

Among the most prominent distinctions marking the divisions of Gothic Architecture, and one easily recognized, is the form of the

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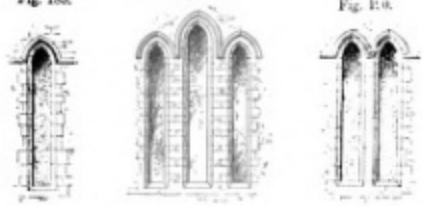
window, and the progress of "tracery" in its decoration. At first the window was used singly, having an acutely pointed arch, and was what is commonly called a "lancet window," Fig. 189. Soon two lancets were

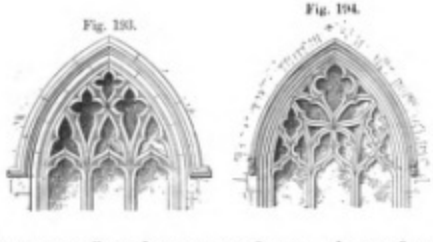
Fig. 189. Fig. 191. Fig. 190.



put together, Fig. 190; and then a group of three, with the centre light frequently higher than those at sides, called a "triplet," as in Fig. 191. These forms mark the Early English period. The next progression was to throw a general arch over the two lights, and to pierce the intermediate space, first with a simple circle, and then with a quatrefoil, as in Fig. 192. This gave rise to what is called

Fig. 192.

Fig. 193. Fig. 194.

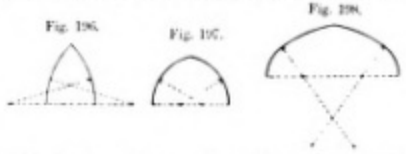


"tracery," and groups of two, three, four, or more lights were associated together under one general arch, the mullions at the head of the window being continued in curves and enriched by cusping, forming various foliated figures. Fig. 193 gives an example of a three-light Decorated window with geometrical tracery. This form of window was in use early in the fourteenth century; at a later period in the style the lines became flowing, Fig. 194. Other examples of flowing tracery will be found in the plates. Early in the fifteenth century these forms were abandoned, and there came into use a more upright form of tracery, in which the perpendicular lines of the mullions ran through the head of the window, and to which the name "Perpendicular" has been given. See Fig. 195.

Fig. 195.

Another characteristic of the different periods was the form of the pointed arch

Fig. 196. Fig. 197. Fig. 198.



itself. When first adopted it was seldom used less than the equilateral, and often much more pointed, Fig. 196; but in the second period it was frequently less than the equilateral, Fig. 197; and in the later period of the Perpendicular the "Tudor" or four-centred arch came into use, Fig. 198.

Again, in the roofs, the Early English were high pitched, forming about an equilateral triangle. During the second period, the Decorated, they became of a more moderate pitch; while in the third, the Perpendicular, they became so flat as to necessitate the use of lead for covering them.

Groining is another feature by which the progress of the styles is marked. In the Norman period groining was simply the intersection at right angles of two semicircular vaults, with at most square or round ribs at

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the diagonal intersections. With the introduction of pointed instead of round arches came increased lightness in the contours of the groining and elegance in the moulding of the ribs, with elaborately carved bosses placed at the intersections. In the middle period the groining became richer and the number of the ribs was increased; and in the fifteenth century the ribs formed a perfect net-work of great intricacy. During the Perpendicular era, also, "fan" groining was invented, in which the whole surface of the groining was covered with tracery radiating after the manner of a fan. A specimen of this mode of vaulting from the Beauchamp Chapel, Warwick, is shown in Fig. 199; and fine examples of it are also found in King's College Chapel, Cambridge, St. George's Chapel, Windsor, and Henry VII.'s Chapel at Westminster.

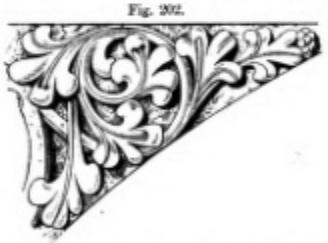
Fig. 199.

With the adoption of the pointed arch in the thirteenth century arose a perfectly new and fresh creation in sculptured foliage. The conventional and traditional forms of the Byzantine and Romanesque foliage, which were more or less based upon the classical renderings of the acanthus, were entirely abandoned, and a style was originated superior perhaps to anything which had been seen before. The artists went to nature, and simply by following their own mode of rendering natural form in stone they produced an architectural flora which possesses a grace and beauty entirely its own. Their principal type was a round-lobed triple leaf, said to be the water-avens (formerly called the *herba benedicta* or "holy herb"), which these artists of the thirteenth century looked upon as emblematical of the Holy Trinity. It is, however, more probable that they followed the threefold principle which they found ran through other plants besides the water-avens—more particularly the clover, wood-sorrel, and hepatica. They further observed that nature carried the same triplicity through compound leaves, such as those of the columbine, creeping crowfoot, and the parsley. Combining these natural principles with a beautiful spiral evolution of form, they worked out a system of ornamentation of extreme beauty and vigour. Fig. 200, an example from the galilee porch of Ely Cathedral, shows the treatment of the simple trefoil united to a spiral stem. This was often varied by making the leaves compound, and increasing the subdivisions into three triple-lobed leaflets (Fig. 201), or dividing them into four or five lobes, as in Fig. 202, from Stone Church, Kent; but still they preserved their emblematical and symbolical character.

Fig. 200.

Fig. 201.

Fig. 202.



All the main lines in Early English foliage are flowing, and the leaves grow out of the

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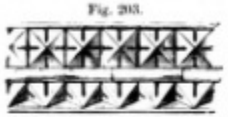
parent stem in graceful and tangential curves. In large spandrels, as in those at Stone Church, a portion of one of which is shown, Fig. 202, the main stems are arranged in grand scroll lines, which oppose and harmonize with the lines of the surrounding architecture, and from these scrolls the leaves branch off in easy curves. The surface modelling and the central ribs of these leaves are peculiar, and deserve attentive study. Generally the main lobe of the leaf has a strong and vigorous square rib diving down into a deep hollow, as in Fig. 200, the end of the lobe beyond being frequently raised into a swollen form in the centre. Then again the lobe of the leaf is occasionally filled, as in the side lobes, Fig. 201, by a large bulbous form. The foliage, therefore, although evidently taken direct from nature, is yet full of peculiarities which are alone found at this period. Nature is apparently concealed under a rendering which is highly conventional, and these artists appear to have taken a delight in hiding, as it were under a veil, the otherwise purely natural types from which their foliage was derived.

The cross form of leafage, another highly symbolical form, was developed by these early workers in a variety of ways. From a four-petalled flower, or the terminal leaves of a branch having opposite foliage, such as the lilac and maple, containing the same elements as the flower, they formed their dog-tooth moulding (Fig. 203), which they sculptured in long lines filling the deep hollows of their arches and mouldings. They also covered their walls with cross-leaved diapers (No. 12, Plate 36), as may be seen in the spandrels of the choir arches at Westminster Abbey. The cross form worked out in the foliage is also found in the bosses of their ceilings and in their stained glass. But, above all, every chancel of every church throughout the kingdom was enriched by a beautifully arranged form of gable cross.

Fig. 203.



In the capitals of this period the foliage invariably rises directly from the necking, either with flat stems or with broad plain leaves like the common plantain. It rises gradually out of the surface, the heads

Fig. 204.

turning over in *crochets* or bunches, as in Fig. 204. In other examples, although rising as before from the necking, the foliage flows round the capital in graceful curves, as in Fig. 201.

At the end of the thirteenth and the commencement of the fourteenth century a more extended rendering of nature was developed, and a greater variety of natural types was adopted; but the symbolical meaning which ran through the ornamentation of the thirteenth century was in some degree neglected. The artist, seeking fresh beauty from natural form, wrought into his

Fig. 205.

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works with consummate skill the ivy, the maple, the hawthorn, and the oak, as well as the vine (Fig. 205), the bryony, the mallow, the hop, and many other plants; and he also introduced the fruit and flowers characteristic of each species. With these are sometimes mingled animals, birds, and other fanciful forms or nondescript creations.

Fig. 206.

The diaper-work on wall surfaces is less frequent than in the Early style, but when it does occur it is much richer and is formed with natural foliage, as in an example from Lincoln Cathedral—Fig. 206, which consists of the hawthorn, maple, and oak. Another example (seen in Fig. 207), from a tomb in the church at Winchelsea, is filled with a single vine leaf and a cruciform arrangement of the maple.

Fig. 207.

Fig. 208.

The most characteristic ornament of this period is the ball-flower, Fig. 208. It consists of a round bud or flower with a triple opening clasping a ball inside, placed in rows in deep hollow mouldings. It occurs so frequently in some buildings, as in the south aisle of Gloucester Cathedral, that every hollow in the mouldings, as well as the tracery in the windows, are filled with them to the exclusion of any other kind of ornamentation. Foliated capitals have the foliage arranged on the bell in a horizontal manner, instead of the more legitimate method of rising from the necking perpendicularly (Fig. 209), and the foliage occupies the whole space between the abacus and the necking in a boss-like form.

Fig. 209.

The scroll arrangement of the stems in foliage was less frequent than in the previous period; and as the style advanced foliage became less natural, and stems were almost entirely omitted. Leaves became divided into long strap-like lobes, and the surface of the leafage, as it became more conventional, was carved in an undulating or bulbous manner. After a time the foliage became so exaggerated as to appear almost like a collection of round knobs or swellings rising out of deep hollows. It had, however, an extremely rich and elaborate appearance, with a sparkling effect of light and shade.

During the fifteenth century, the period of the Perpendicular style, architecture as an art became so highly scientific that constructive execution, or masonic excellence, took almost a higher place than beauty of form, and the architectural carver lost much of his early artistic power. The application of elaborately panelled tracery and canopy work took the place of the earlier kinds of ornamentation. Foliage was less used during this period than in either of the previous ones. Capitals of piers were very much reduced in size, and were usually devoid of foliage. For the enrichment of wall surface, tracery panelling was almost invariably used, and foliated diaper work

Fig. 210.

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was totally abandoned. Foliage, especially that of the vine, was frequently introduced in the hollows of the cornices of small works, such as tombs and screens. These were crowned usually by an open-worked ornament, which has been called the Tudor flower or "strawberry-leaf ornament," Fig. 210. The rose, a distinctive cognizance during the wars of the Roses, was a frequent and conspicuous enrichment.

The treatment of wood-work seems to have made an advance during this later period, and the carving in seating and screen work was very delicately executed,

Fig. 211.

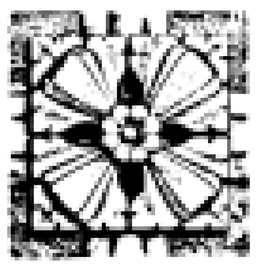
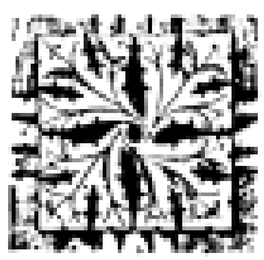


Fig. 212.



although a conventional use of the gouge is conspicious. To this age belong most of our beautiful and elegant oak rood-screens, which are often elaborately painted and gilded, with figures of saints painted in the lower panels. The timber roofs of this period are frequently highly ornamental, being enriched with bold and effective carving. The bosses at the intersections of the timbers are often of good character, although carved square and flat, as in Figs. 211, 212, from All-Saints' Church, Evesham.

Greater scope was given to sculpture than foliage at this period, especially in large works, some of the doorways of the continental cathedrals being crowded with sculpture. Figures were placed in niches with elaborate canopies above. Shields and heraldic emblems of every description were also commonly used, and grotesque animals and monsters often took the place of foliage, but were seldom, as heretofore, mixed or amalgamated with foliage. Although the carving of the fifteenth century evinces great skill and facility in the use of tools, yet the freedom of form and the graceful curves and spirals of the earlier styles were entirely lost.

Towards the middle of the sixteenth century Gothic architecture was almost superseded by the pseudo-classic style of Elizabeth's reign. Much of the old Gothic character, however, lingered for a considerable time, and is often found mixed up with the more classic forms of this later style. These examples show how the carvers of a later period still lovingly adhered to their older associations.

During the middle ages the use of stained glass in windows was a striking and important source of decoration to buildings of nearly every kind, but more especially to cathedrals and churches. The glass of the thirteenth century was of two kinds: the one richly coloured with medallions and panels of small figure subjects accompanied by foliage, as seen in the windows of the eastern portion of Canterbury Cathedral; the other was without figures and with less colour, and was formed by various combinations of geometrical lines in narrow strips of colour, the whole surface being covered with the conventional foliage of the period painted in black or brown lines, as in the example shown in Fig. 213 from Salisbury Cathedral. This species of glass is known as *grisaille* glass, and is highly characteristic of the Early English style. The five lancet windows of the north transept of York Cathedral, commonly known as the "Five Sisters," are filled with the original glass of this character. During the fourteenth century figures were more

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frequently introduced in the glass, with an increase of colour, and the foliage became more natural. Towards the close of this period single figures occupying a considerable portion of each light, with canopies above them, were frequently used. In the fifteenth century, the Perpendicular period, the general character of the glazing became more uniform, and consisted mostly of large

Fig. 213.

figures of saints or apostles, each occupying an entire light, placed in niches with elaborate canopies. In very large windows these niches and figures were arranged one above the other so as to fill the whole light. The draperies of the figures often consisted of large masses of colour, and the colouring was much richer, with a greater proportion of yellow, than heretofore. In domestic windows arms and heraldic devices were abundantly introduced, accompanied by mottoes or inscriptions on long narrow scrolls, and the only colour used was the yellow stain. Quarry-work, each quarry containing a sprig of foliage with yellow leaves, with borders to the lights in brighter colours, was also very common for plainer buildings, or as a ground for the heraldic work.

To make the walls of churches harmonize with the gorgeously coloured windows they were decorated and enriched with colour as well. Gilding and colouring were often freely introduced in the roofs or groining; and the floors were also made to accord by the more sombre tones of encaustic tiles or inlaid marble.

The artists of the Gothic period excelled also in the goldsmith's and jeweller's art, for which England has been celebrated even in Saxon times. We have, however, very few specimens remaining of this art,[1] which doubtless was largely employed for English shrines. The shrines and other minor works preserved at Aix-la-Chapelle, Cologne, Marbourg, Tournay, Evreux, and other places on the Continent, abundantly display the excellence of design and the exquisite beauty of the gold and silver smith's work, the enamel work, and the jewelry which were lavished upon them. Chalices and sacramental plate, reliquaries, and numerous other objects, were executed with the utmost perfection of art and workmanship.

During the fourteenth century tapestry hangings were introduced in the halls of the nobility, and Arras became famous for its beautiful fabrics of this kind. They were at first employed to line the walls of halls at the back of the dais, which was

[1] The crosier of William of Wykeham, Bishop of Winchester, preserved in New College, Oxford, is one among the very few specimens of English workmanship which has been preserved to our day.

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occupied by the high table. Tapestry, indeed, became the favourite ornament of the later mediæval period, and in processions and on state occasions great displays of rich stuffs and hangings were made, representing, as Froissart relates, "various scenes and histories to the delight of all beholders."

Plate 35.

No. 1 represents a seal after the mediæval manner. A figure under a canopy, seated on a throne representing vigilance (the greyhound) and power (the lion), between two angels, who are presenting the one a book, and the other a shield.

No. 2. Vesica panel with St. Michael supported by saints overcoming the evil one. The lion of St. Mark below.

Nos. 3, 4, 5, 6, 7. Tracery panels of various design for metal-work. Small tracery work of this character was much in use for locks and plates during the fifteenth century. Many specimens are very elaborately cut. The metal was usually in plates of several thicknesses fastened together with pins or bolts. The ground was sometimes covered with scarlet cloth, or decorated by painting, as is No. 7.

No. 8. One compartment of an oak rood-screen (style fifteenth century). The figure introduced in the open-work above is an outline for painting.

No. 9. A band or frieze of flowing tracery, of late fourteenth-century character.

No. 10. A square boss for carving in oak. Fifteenth-century character.

Plate 36.

No. 1. Vesica under a canopy with the paschal lamb, and monogram "John Lambe;" for engraving on brass or other metal.

No. 2. Decorated or fourteenth-century flowing tracery, from the back of the altar, Beverley Minster.

No. 3. Angle of panel with carved frame consisting of tracery and foliage, with painted and gilded panel in the centre.

No. 4. Panel for wood-work, with vine-leaves and grapes.

No. 5. Vesica with angel carrying a shield emblazoned with the sun of Christianity enlightening the Negro, emblematical of the motto, "Lord, lighten our darkness." Composition for painting.

No. 6. Panel for wood-carving (fifteenth century) with head of king with sceptre. Crowned heraldic shield with monogram and supporters. Linen-fold panel below.

No. 7. Ornamental fillet.

No. 8. Late French Flamboyant Gothic tracery panelling, for piercesl carved work in hardwood or ivory.

No. 9. Tracery panel for carving, with paintings or inlay of bear and fawn.

Nos. 10 to 16. Compartments for stone carved dinpers, each division by repetition forming a separate and distinct pattern. Examples of stone diaper work are to be found in Westminster Abbey, Beverley Minster, Winchelsea Church, &c.—See also Figs. 206, 207.

Plate 37.

Design for a book cover, the New Testament, and back for the same, in naturalesque Gothic. Among the foliage is introduced the lily as the emblem of purity, and the passion-flower as emblematical of the passion of our Lord. In the centre is the cross with the sacred monogram. The dove as emblematic of the Holy Spirit descending from above within a triangle for the Trinity and a circle for eternity. The cross as emblematical of Christianity vanquishes the evil spirit, which is represented as a winged serpent in the act of falling. In the corners are the emblems of the evangelists, and the capitals of the slender columns are formed by angels bearing shields containing the emblems of the passion. The back contains a vesica, in which is the Holy Virgin and Child, surmounted by the heart and cross, with angels at the sides in adoration. The foliage is composed of the rose, ivy, and lily.

Plate 38.

No. 1. Late German-Gothic panel with bordered vesica containing painting or low-relief carving of the Virgin and Child, with the emblems of the evangelists at the corners.

No. 2. Panel with flowing tracery, containing shield with heraldic double-headed eagle, for carving or metal work.

No. 3. Carved oak panel, French Flamboyant

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tracery. The Flamboyant form of tracery is also found occasionally in English work, as in the west front of York Cathedral, and other buildings. The English artists, however, did not carry it to excess as in France. Although it was adopted in late Decorated work, the flowing forms were soon neglected for the Perpendicular, which form of tracery was never adopted by French artists. Hence the reason for their carrying the Flamboyant to such an excess.

No. 4. Head of tracery panelling having interlaced lily foliage, with heart-form filled with branched radiating triple foliage.

No. 5. Lily in interlaced tracery form, with flat strawberry foliage, flowers and fruit, and thistle leaves.

Nos. 6, 7. Tracery panels with foliage, for carving or metal work.

No. 8. A suggestion for the combination of foliage and tracery, with crowned pine and heart. The parts blacked in are pierced. Suitable for embossing.

Plate 39.

No. 1. Vesica panel filled with geometrical and flowing Decorated tracery.

Nos. 2, 9, 11, 12, 13, 14. Forms of plate tracery for metal work.

No. 4. Canopied head of niche, for metal work.

No. 5. Head of angle niche, for carving in oak.

Nos. 3, 6, 7, 10. Small oblong and circular tracery panels for carving. Might be applied to furniture.

No. 8. Flowing tri-form panel, representing the burial of the dead, the passage of the river Lethe after death, and the ascension into heaven.

Plate 40 (Superficial).

No. 1. Decorative panel; conventional arrangement of the rose.

Nos. 2 and 3. Decorative and geometrical forms for wall-papers or draperies.

No. 4. Upright design for heraldic crowned shield and supporters, with circular and flowing lines combined.

Nos. 5 to 22. Designs for encaustic tiles or squares for repetition as diapers for painted wall decoration, —comprising, among other forms, interlacing lines, rose and crown, lily, fleur-de-lis, rose, shamrock, and thistle, maple leaf, horse-chestnut leaf, dolphin, crosses, and lion.

No. 23. Royal arms with Tudor rose, oak and acorns (England).

No. 24. Diaper containing a combination of the thistle, St. Andrew's cross, and fleur-de-lis (Scotland).

No. 25. Combination of flowing lines with harp, shamrock, and stars (Ireland).—The last three designs are intended for painted wall decoration, or might be adapted to bookbinding or other flat surface.

CHAPTER XVII

ORNAMENTAL METAL WORK.

AMONG all the decorative arts no more comprehensive subject is to be found than that of metal work. It not only embraces the working of bronze, brass, iron, and other metals, but it also includes the delicate and intricate processes connected with the working of the precious metals gold and silver. Full reference to the decorative use of these more noble metals would alone be sufficient to form a treatise in itself; the subject, therefore, is here necessarily treated in a concise manner, and principally limited to the use of bronze and iron.

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The mixture of copper and tin called bronze, and its application to nearly every purpose to which metal can be applied, dates from a very remote period in history, even before the use of iron was known or understood. The Egyptians, Assyrians, and Phœnicians were great workers in bronze; and the latter people in very early times, perhaps a thousand years before the Christian era, traded largely with Britain in copper and tin ores, which they obtained from Devonshire and Cornwall. Other supplies of these minerals may also have been procured from Arabia and Persia, and perhaps from Northern India.

Not only do the sacred writings make frequent mention of the use of brass, by which bronze is generally understood to be meant; but classical writers, both Greek and Latin, are full of references to numerous works in metal. Homer and Hesiod describe with great minuteness the shield and armour of Achilles, and the shield of Hercules,—and by the frequent allusion to the use of plates of brass, or more correctly bronze, show how commonly they were applied to the decoration of walls and furniture.

It was the Greeks, more especially, who brought the art of working in bronze to perfection. Not only were statues cast by them in this metal more colossal than have been ever done since, but the architraves, doors, and many ornaments of their temples, the prows of their war-galleys, their armour and weapons, and many instruments requiring a fine edge, such as razors, saws, axes, chisels, were all made of bronze. The Egyptians and Greeks had also some means of hardening and tempering these instruments with which we are unacquainted.

The early Greek sculptors, all of whom appear to have largely worked in bronze, executed many of their works by hammering out the metal plates in relief from the back and then fastening them together with pins or rivets. In the case of figures, these hammered plates, called *sphyreluton* or *torentic* work by the ancients, were probably fastened on a wooden core or model. This is similar to the *repoussé* or beaten work of our own day.

The invention of hollow castings, in which the metal is kept to a given thickness by an inner core composed of modelling clay and plaster, is attributed by Greek writers to the Samian artists Rhœkos and Theodoros, whose date is considered to be between B.C. 580 and 540. The process, however, was practised in Egypt at an earlier date, and it is probable that these artists only brought it to greater perfection. As the art of casting advanced, the thickness of the metal was greatly reduced, until the minimum was arrived at consistent with strength and durability. Bronze of a very fine quality and rich colour was used, and its effect was greatly enhanced by skilful tooling and chasing after the work was cast. Parts were also sometimes inlaid with gold and silver or enamelled in colour.

Numerous great artists worked in bronze during the flourishing age of Greece; among others we hear of Myron, who executed a celebrated group of Jupiter with Minerva and Hercules at Samos, a statue of Erechtheus at Athens, and a group of Minerva and Marsyas, of which latter figure there is an antique copy in marble in the Lateran Museum at Rome. The Discobolus in the British Museum, which represents a young athlete in the act of throwing the *dis-*

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cus, is believed to be a copy of a celebrated bronze statue executed by this sculptor. To Cresilas, a follower of the school of Myron, has been ascribed the statue of a Wounded Amazon in bronze, of which some antique copies in marble are still extant. Phidias executed a group of thirteen bronze statues, which were presented by Athens to Delphi in memory of the victory of Marathon. He also cast colossal and other figures of Minerva, particularly one made from the bronze spoils of Marathon, which, some seventy feet in height, crowned the summit of the Acropolis at Athens, and became a typical representation of the goddess. Some idea of the extent to which bronze was employed for sculpture may be formed from the statement that a Roman consul, in the year 130 B.C., found at Athens three thousand bronze statues, and as many at Rhodes and Olympia. Of these numerous works, many of which were doubtless of transcendent merit, comparatively few have been preserved to our own time, the value of the metal itself almost invariably leading to their destruction. Of large works, the horses at St. Mark's in Venice, the colossal figure of Hercules now in the Vatican, the equestrian statue of Marcus Aurelius at Rome, with a few others of life size, are almost the only examples which remain. Antique bronzes of smaller size, many of them from Pompeii and Herculaneum, are to be found in most European museums, especially the National Museum at Naples.

We have in early records soon after the reign of Constantine, many notices of gifts to churches of works in bronze, showing that casting and chasing in that material was still carried on. The most important specimen which has been preserved from those days is the seated statue of St. Peter, in St. Peter's at Rome. Its date is about A.D. 450, and the figure is unusually good for the debased art of that period. The chair or throne of Dagobert, now in the Louvre, is another famous bronze ascribed to the seventh century.

With regard to beauty of form and perfection of casting in bronze, the old inhabitants of Britain rivalled the most skilful workmen of the present day. During the later Celtic period the shields and other objects were not only enriched with enamel, but were carefully executed in relief with no mean artistic power.

Admirable works in copper, executed in Ireland about the eleventh century, are still preserved, among which may be mentioned the so-called St. Patrick's bell, cleverly inlaid with gold filigree work of Celtic character and set with crystals. The Irish from a very early period were skilful workers in gold and precious stones, besides being good bronzists, and they carried the art of enamelling on metal to great perfection.

The use of engraved brasses as monumental tablets in this country commenced about the thirteenth century. They were at first imported from Germany and Flanders, but were subsequently manufactured in England, and in no country are these memorials so numerous. They were often formed of several pieces of brass shaped to the outline of the figure or other object, and inlaid to an even surface on a slab of stone or marble. The engraving on the larger number of English brasses was certainly the able work of native hands. These brasses were sometimes enamelled or inlaid with colour, and canopies of great elegance were frequently arranged above the figures.

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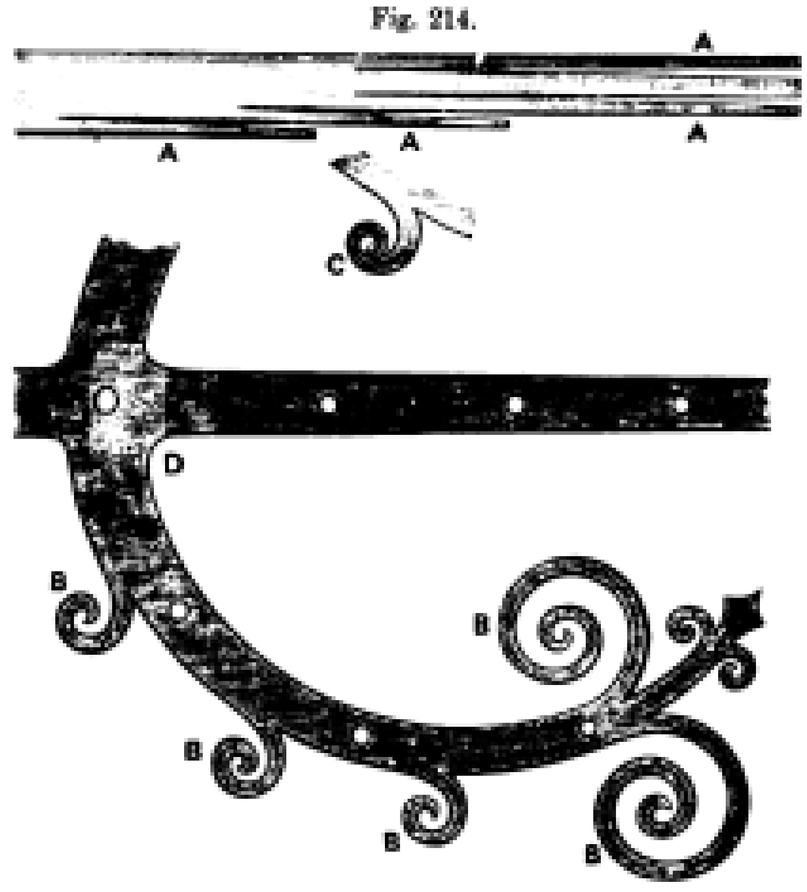
The beautiful monument to Queen Eleanor in Westminster Abbey, who died in 1291, consists of an altar-tomb of grey marble enriched with shields and niches of carved work. On a table of bronze gilt, ornamented with a lozenge diaper in which are engraved the arms of Castile and Leon, reposes the effigy of the queen, a work of the greatest merit. The head rests on cushions again diapered with the arms of Castile and Leon, above which is an angular canopy of metal at one time richly gilt. Round the verge of the table runs an inscription in raised letters. On the northern side is a screen of wrought-iron work, which will be described presently. The bronze effigy was the work of Master William Torell, goldsmith and citizen of London.

Many other excellent works still exist in bronze—or as the metal was called in the middle ages *latten*—both in Westminster Abbey and elsewhere. Among these it will be sufficient to mention the effigy of Henry III., which lies next to the tomb of Queen Eleanor; and the magnificent bronze work forming the tomb in Henry VII.'s Chapel, the effigies being the work of Torregiano, an Italian. The screen inclosing the tomb, also of bronze, formed of tracery with statuettes in niches, is of English workmanship.

At the commencement of the twelfth century arose that extensive use of iron forged and united by the hammer while at a red heat which formed so conspicuous a mode of ornamentation during the middle ages. Both the Saxon and Norman smiths displayed the utmost ingenuity, and arrived at great perfection in this branch of work. Besides the numerous other objects to which it was applied, the hinges of church doors were expanded into beautiful ornamental forms, until they literally covered the whole door with elaborate and elegant combinations of scroll-work.

These hinges were executed in different modes according to the nature of the work. Some of the most simple and yet effective, of the twelfth century, were formed in a great measure out of one piece of iron. A plate of that metal being cut as shown at A, Fig. 214, was heated, and the tongues A, A, A

Fig. 214.



twisted while hot into the spirals B, B, B. The whole branch was again heated and then bent to the required form. Afterwards, when the parts were all prepared, they were welded to the centre band of the hinge at D. The scrolls when fastened to the door with nails had the appearance shown by C.

In the thirteenth century, when scroll-work with leafage was adopted, as in the example Fig. 215, from St. Mary's, Norwich, every small leaf or sprig had to be formed separately, and afterwards attached by welding to the main spirals. When each branch was completed, and the scrolls and leaves carefully regulated, they were welded

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to the centre band of the hinge. As it was a difficult matter to finish these principal weldings neatly and evenly, more especially when the scrolls became large and heavy, they were usually concealed by a species of doubled-over leaf, as shown in detail at A, Fig. 215. These leaves and flowers, as at A and B, were produced by stamps made of hardened iron, and containing a mould or the reversed form of the object to be stamped.

Fig. 215.

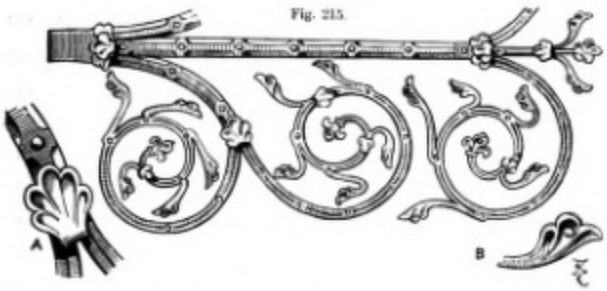

Fig. 216.

No doubt there were formerly in existence many other beautiful works in iron, such as open-work screens of elaborate scroll work, but which from the lapse of time and other causes have nearly all disappeared. One now remaining, on the north side of the tomb of Queen Eleanor, before mentioned, was for a number of years thrown aside as worthless old iron, and has not very long been restored to its original position. Fig. 216 is a portion of this elegant and elaborately wrought screen. Every panel or division throughout its whole length is of a different design; and it will be observed that the scroll work is so delicate that in some cases bands have been added at a later period to strengthen and keep it in position.

Keyhole plates and door handles were favourite objects of art with the mediæval smith, and many examples of these are found of quaint form and very skilfully designed. Cabinet hinges, especially in the fifteenth century, were frequently executed in two or three layers or plates of iron, as in Fig. 217, (shown in section at A), each plate being cut differently to develop tracery or other work. In this example cupped-trefoil flowers are placed in the centres of the trefoils, which are held in position by the nails.

Fig. 217.

Nos. 2, 9, 11, 12, 13, 14, Plate 39, give designs for small ornamental panels, and a key-plate, of this species of metal work. These were sometimes left open without a ground, as in Nos. 2 and 14; or the ground was covered with crimson cloth, Nos. 11 and 12, or gilded leather, No. 13.

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English smiths maintained their excellence of workmanship, and produced vast numbers of admirable examples of their skill, during the seventeenth and eighteenth centuries. Many of these existed in London and its neighbourhood until a few years ago, but they are now fast disappearing. Some very beautiful iron work in the form of gate screens existed until lately at Hampton Court Palace, but as they were fast perishing from exposure to the atmosphere they have been removed, and are now preserved in the South Kensington and Bethnal Green Museums. They were designed and executed by Huntingdon Shaw, a native of Nottingham, about the year 1695. One of the pilasters, or side portions, of one of these screens is represented by Fig. 218.

Fig. 218.

The use of cast-iron is a much more modern application than that of wrought-iron. The first iron castings in England were made in 1543, in Sussex, by Ralph Page and Peter Baude, but the process did not come much into use until a considerably later date. The railing round St. Paul's Cathedral, which dates about 1710 and was cast in Sussex, is said to be some of the earliest cast-iron work put up in London.

Fig. 219 represents a bolt said to be of chiselled iron of French workmanship, dating about 1550; but it is probably an early example of cast-iron, although perhaps finished by the aid of the chisel. Iron is particularly well suited for the casting of such work, as it can be done with the utmost precision and beauty without having to be touched after it leaves the mould.

Iron is cast from a mould formed in sand. When the sand, which is of a soft and clammy nature, is properly prepared and firmly packed within an iron frame, the wood or metal pattern of what is intended to be cast is pressed into it, so as to leave a clear and well-defined impression. The pattern is then taken out by loosening it all round, taking care that the sand does not give way or become injured. The other half of the mould is then worked with the same pattern in a similar frame; this half has pins which enter into holes that correspond in the first half, causing the two halves of the pattern to fit exactly to each other. Canals are provided for the metal to run through, small holes are made to allow the air to escape, and when all is ready the molten metal is poured in. It is of great importance to avoid air-bubbles in casting, and the more time allowed for cooling the better, because when rapidly

Fig. 219.

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cooled the iron does not become so tough as when cooled gradually. In making patterns for iron castings an allowance of about one-eighth of an inch to every foot has to be made for the contraction of the metal in cooling.

No material has suffered so much by injudicious treatment as cast-iron. Every material, no matter of what kind, when used for constructive or ornamental purposes has a treatment or mode in which it should be used which is more peculiarly its own, and if not so used, it assumes, more or less, a false position. This is never more conspicuous than when one material has been made to imitate the appearance of some other material. In this respect cast-iron has been degraded by every variety of false treatment more than any other material. At one time it has been made to look like stone work, at another it has had the character of wood work given to it, but even more frequently still attempts have been made to give it the appearance of wrought-iron. The ease with which iron is cast into various ornamental forms aids this attempted imitation, but it invariably fails to be successful. To give iron the heaviness of stone by casting it with broad surfaces but hollow or in thin plates is a piece of deception which cannot be too strongly condemned, yet it has been so used in numerous instances. On the other hand, to make it imitate the lightness and freedom of lines of wrought or forged iron is to expose it to be destroyed by breakage, as iron when cast is so much more brittle than when wrought. In designing cast-iron, therefore, the several parts should be moderately stout, arranged throughout to be of about the same size and thickness of metal; and when of open work, to have attachments wherever practicable. In scrolls frequent connections or ties should be contrived, so that no part be left unsupported and liable to be broken off.

Ornamentation and foliage should never be excessive upon cast-iron, because it becomes an easy mode of concealing bad casting. Nothing is more difficult than to keep sharp, straight edges and angles in the sand mould; and in cheap work, therefore, we often see an attempt to conceal bad and inferior casting under an accumulation of wretched ornament. An excess of foliage should be avoided, especially when introduced on a ground in high relief, for the reason that there can be none of what is called *undercutting* in cast-iron, as every part in relief requires to be bevelled so that the model may be drawn out of the sand, as shown by the section Fig. 220. When ornament is much raised from the surface, thick bevelled edges, as at A, Fig. 220, become very disagreeable, and have a clumsy appearance when the work is viewed diagonally. No matter how good the modelling may be, if these thick and clumsy edges are persisted in they will invariably destroy all artistic feeling in a work. It follows, therefore, that all surface ornamention in this material should be of a flat, delicate, and slightly relieved character, so as to avoid deep chamfered edges.

Fig. 220.

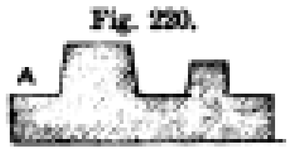
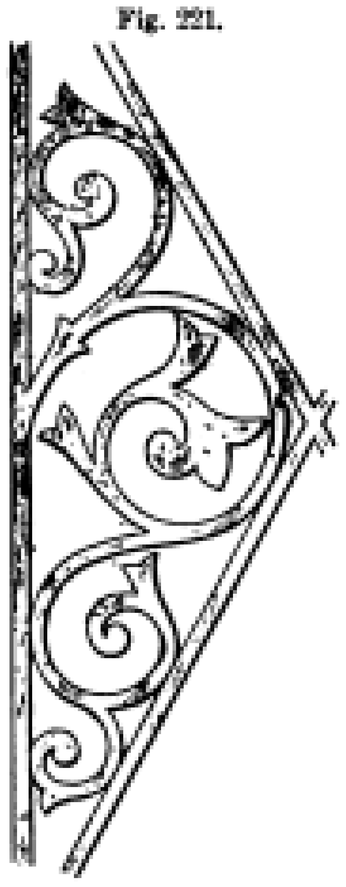


Fig. 221.



Another false application to which cast-iron is subjected is that of casting it in twisted

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bars for iron railing. This is a form which is admirably adapted for wrought-iron, and it is one which a skilful smith can produce with great perfection; but the cast twist, showing the clumsy junction of the moulds, becomes nothing but a miserable imitation. In pierced or open work with cast-iron, such as railings, no form is more appropriate than the square bar, and all ornamentation should grow out of it, as shown by Fig. 221.

Plate 41.

No 1. Portion of cast-iron grille or railing with wrought-iron twisted spike.

No. 2. Wrought-iron cross in plate-metal; lower portion in cast work, with angels, heart, and crown.

No. 3. Cast-iron pierced cross or finial, with the head of our Saviour.

No. 4. Cast-iron key-plate with ornamentation in bas-relief; dragon and shield charged with mailed hand and bent rapier, with the motto, "True as steel." Dragons holding ring, horse-shoe, file, and arrow-head.

No. 5. Finial or ornament for metal-cresting, intended to be worked in wrought-iron.

No. 6. Grille with gablet and fleur-de-lis terminal in cast-iron, with panels partially filled in with pierced iron-plate.

No. 7. Design for cast-iron railing, the twisted bars are more suitable for wrought than cast work.

Plate 42.

No. 1. Cast-iron finial with St. George and the Dragon, shield with St. George's cross gules on argent.

No. 2. Wrought-iron hinge, with crenated foliage.

No. 3. Wrought-iron hinge, with eyes and wings.

No. 4. Cast-iron hinge, shown broken for application to different lengths.

No. 5. Cast-iron hinge with cock and motto "Vigilans; C. K. 73."

No. 6. Cast-iron hinge, with raised edges and flowers in low-relief.

No. 7. Bracket for gas in brass formed with pansies.

No. 8. Bracket for gas in brass formed with fuchsias. This system, however, of making gas jets come out of flowers is not to be commended.

No. 9. Metal corner for book cover or other purposes.

No. 10. Key-plate, in two layers or plates of metal.

No. 11. Ornamental head for nail.

Plate 43.

No. 1. Copper vane with fish and initials "I. E."

Nos. 2 and 3. Brass corners or ornaments for wooden book covers.

No. 4. Cast-iron staircase railing in square iron.

No. 5. Ornamental terminals for railing in cast-iron, principal one surmounted with pelican upon ball.

Nos. 6 and 7. Bosses or bolt heads.

No. 8. Bracket for light in chased brass, with chameleon, viper, and snail.

No. 9. Portion of cast-iron grille or railing.

No. 10. Keyhole plate or escutcheon, with Love on the heart and armed with the key of love.

No. 11. Wrought-iron key-plate with incised ornamentation, for alms-box, with the impaled hands and feet and wounded heart, to represent the five wounds of our Saviour.

No. 12. Bronze handle or knocker, with head of hound.

Plate 44.

No. 1. Wrought-iron finial and copper vane, with stars and swallow.

Nos. 2, 8, 9, 13, and 14. Door-handles for bronze or wrought-iron, with cut or moulded plates.

Nos. 3, 10, and 11. Wrought-iron key-plates, the first with entwined dragons worked on plate.

Nos. 4 and 5. Ornamental nail heads.

Nos. 6 and 7. Foliated scroll work for wrought-iron or brass.

No. 12. Ornamentation in wrought-iron, crowned V, with rose, shamrock, and thistle.

No. 15. Metal bow for key, which may be executed as shown or pierced.

No. 16. Wrought-iron foliated terminal ornament.

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CHAPTER XVIII.

GEOMETRIC ORNAMENT.

GEOMETRICAL form is the foundation of all ornamental art, however much the employment of it may sometimes be concealed or obscured. It is only in some late and extravagant styles (such as the Louis XV.), in which novelty alone was sought for, that this principle is little heeded or altogether abandoned; but in the best periods of art it will unquestionably be found, upon careful examination, that ornamentation was invariably set out upon a geometrical basis. In the Persian, the Moorish, and the Arabian styles geometrical combinations have been carried to a vast extent, and made to interlace and ramify into an infinite variety of the most complex arrangements and intricate designs.

The Chinese and Japanese are extremely fond of diapering portions of their vases and other works with geometrical combinations of lines filled in with colour. In Indian work also, although the lines are sometimes more erratic than those used in other countries, they are nevertheless generally founded upon the same simple geometrical figures.

A similar principle of geometric arrangement prevailed during the Byzantine era, but it was not wrought out to the same degree of complicacy as in the Mohammedan styles. It was found of the greatest use for marble inlays and mosaic decorations, which were such important features during that period. Many of these geometrical combinations have been handed down to the Gothic and other styles, and were employed more particularly for designs for early stained glass, inlaid pavements, and parquetry. In these arrangements some are found which may be distinctly traced through all the previous great periods of art—even going back to the Greek, the Assyrian, and the Egyptian.

Not only may geometrical form be found in such combinations, but it may also be traced in the setting-out or leading lines of all decorative foliage. Geometrical lines form the groundwork upon which such foliage was designed. At no period is this more distinctly seen than in the foliage of the Greek, the Moorish, and the Byzantine styles. This practice is in perfect accordance with natural laws, the shapes of all leaves and flowers being based upon geometrical forms. There are two great principles in nature which are always acting in opposition to each other —regularity or geometrical symmetry, and irregularity or absence of order. These are ever present,—the regular as an underlying power, but irregularity runs riot so as, apparently, to obscure or obliterate all geometrical precision. To create true art-workmanship we must in like manner em-

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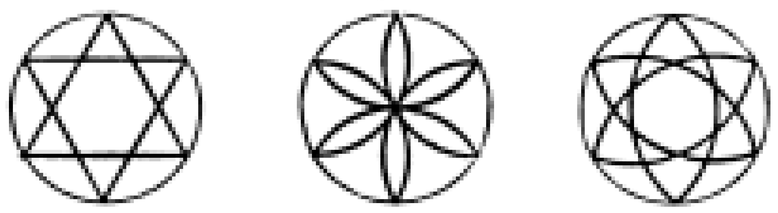
brace the two principles—order and disorder, regularity and irregularity, but from our limited powers we must always hold much closer to the former than to the latter.

It will be perceived, therefore, how necessary it is to study geometric form. All curved and straight lines are based upon the simple geometrical figures, the triangle, square, and circle,—with their compounds, the hexagon, octagon, and ellipse. With these a vast variety of the most elegant combinations can be made, many of which have been used in almost every period of ornamental art. The principles of geometric ornament are the same in all styles of decoration, and the

Fig. 222. Fig. 223. Fig. 224.

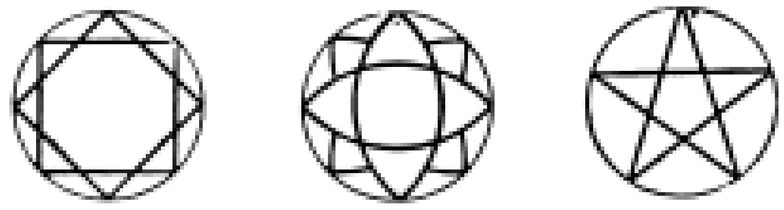


simple elementary combinations are to be found, more or less, in all of them. It is a fact worth noticing, that the geometrical figures have led to similar results in various quarters of the globe, which probably have had no connection or correspondence with each other. This may be observed by comparing the Chinese, Japanese, and Indian lines of ornamentation with Romanesque and Gothic forms.

The careful observation of the different modes of treatment upon the same lines, as exhibited in different and distinct styles, cannot fail to lead the student to greater power and facility in design, and this study should therefore be cultivated wherever opportunity offers.

No entirely fresh geometrical combinations can be invented, although the original ones may be varied and recombined indefinitely. If we commence with the triangle, one of the first and most simple arrangements is that of the double triangle drawn from the hexagonal points in the circle, Fig. 222.[1] Then by the aid of the radius, from the same points, we can form what is commonly called the "Kite Star," Fig. 223. This may be varied by finding the intermediate points of the hexagon upon

Fig. 225. Fig. 226. Fig. 227.



the circle, and striking therefrom the arcs of a circle touching the six points of the hexagon, and forming three interlacing vesicas, as in Fig. 224. This will be seen ornamentally treated at No. 5, Plate 65, and, with the reverse curve, at No. 3, Plate 83.

The triangle and square, with the hexagon and octagon, are used more than any other figures for mosaic inlay, and it is extra-

Fig. 228. Fig. 229.

ordinary the vast number of different combinations which it is possible to obtain upon these few simple figures. Figs. 222 and 223 may be repeated so as to cover an extended surface as a diaper or inlay, instead of being used as a centre.

If two squares are placed in a circle, as in Fig. 225, they give an octagon in the centre, with eight right-angled triangles, a form which may be carried into various combinations. Using the same points on

[1] Combinations upon the double triangle will be found at No. 10, Plate 31, and No. 4, Plate 65.

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the circle with arcs struck from the points, as in Fig. 226, forming vesicas, they give the cruciform flower-form, the points of the intermediate vesicas representing the calyx.

The pentagon is also an elegant form, but it is incapable of being combined to any great extent. When the pentagonal points are united in a star, as in Fig. 227, it makes what is called the *Pentalpha*. It is the

Fig. 230.

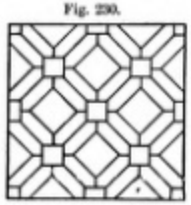
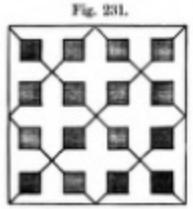


Fig. 231.



most common form in flowers, as in Fig. 228, which represents a five-petalled flower of a pointed shape, with the intermediate points of the calyx. Another natural pentagonal arrangement is that of Fig. 229, which roughly represents the primrose, formed of five heart-shaped petals.

To exemplify how simply and easily

Fig. 232.

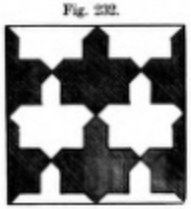


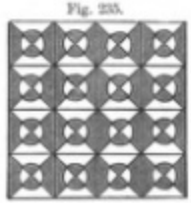
Fig. 233.

changes may be made in geometrical combinations, giving entirely new and different results, suppose we take No. 11 from Plate 45, which is a combination of diagonal squares, with crosses at the intersections used for glazing. If we omit the crosses it forms another well-known pattern for glazing, Fig. 230. Retaining the original diagonal squares, but removing the smaller squares to the sides of the diagonal ones, as in Fig. 231, we produce a series of crosses. Omit half of each smaller square, that is, cut out of each diagonal square four right-angled triangles, as in Fig. 232, and we obtain a totally different result, namely, a tile pattern in two colours, each tile being of the same form throughout.[1] Alter the position of each right-angled triangle, so as to cut out four portions from each square at an angle of 45 degrees instead of 90, and we have another very interesting combination, each division being of the same form, and fitting one into another, Fig. 233.

Another combination for tiles is given at Fig. 234, in which the original lines of the diagonal squares are indicated. Each tile is

Fig. 234.

Fig. 235.



here precisely alike, but the colours in the alternate tiles are changed, making apparently a complicated, but in reality an extremely simple pattern. A variation will be again found at No. 4, Plate 34.

Now going back to the diagonal squares, but subdividing them and using circles instead of the smaller squares, as in Fig. 235, we obtain a pattern which has been used for marble inlay. Omit half of each circle, and we arrive at a series of pointed quatrefoils and crosses, as in Fig. 236. Reverse the position of half the semicircles, and we get a mediæval tile pattern in two colours, Fig. 237, all of which are of similar form fitting alternately into each other. Many other different results may be obtained upon the

[1] No. 9, Plate 84, is another variation upon the same lines.

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same general lines, but these examples will be sufficient to show the importance of the study of geometrical combinations as the basis of ornamentation.

In bands, string-courses, mouldings, or borders the same geometrical formation is necessary. Ornaments set out on squares are of frequent occurrence. If we divide a moulding into squares, and divide each

Fig. 236.

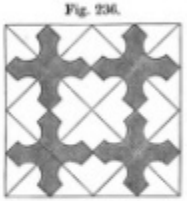

Fig. 237.

square diagonally, as in Fig. 238, we obtain the saw-tooth ornament; with a slight addition, as in the second half of that figure, it becomes foliated; add another diagonal line, as in Fig. 239, and we have the nail-head ornament; form this into four leaves, and it gives the dog-tooth ornament, as in the second half of that figure. Reversed semi-

Fig. 238.

Fig. 239.

circles, made continuous, form the ordinary wave-line, which may be variously altered by increasing the radius, and two interlacing wave-lines give the ordinary guilloche, No. 6, Plate 8.

Upon such simple and elementary forms, or others of equally rudimentary character, are arranged a multitude of other kinds of mouldings, string-courses, or borders, more or less complicated, particularly in Greek and Roman ornamentation, of which examples will be found in the plates. By studying the method by which they are formed the student may soon learn to design others for himself which will be equally applicable for similar purposes. Geometrical formations are also necessary for much larger enrichments. They form the "setting-out lines," that is to say, the foundation lines upon which ornamental forms are placed, whether they be of foliage, of colour, or any other species of decoration.

Diapered surfaces require to be divided into geometrical divisions, and these may be varied according to the material to which they are applied—such as the glazing of windows, wall-papers, parquetry, tile-work, or mosaic inlay. The accompanying plate presents many useful examples of these. It will also be observed that a great number of the ornaments and designs in other plates throughout this work are set out and arranged geometrically upon similar principles.

To seek to reduce intricate inlays and ornament to their simple and elementary geometrical lines will be found a useful and valuable study. It not only enables the student to discover on what simple elements the most enriched ornamentation may be founded, but it furnishes him with the means of devising variations which he may himself clothe in a different manner.

Plate 45.

No. 1. Eight-pointed star, for inlay in marble or wood. The lines indicate the mode of contrasting the colours, which may be black, white, red, and yellow.

No. 2. Square form suited for glazing, inlay, or filled in with ornament, founded on a four-petalled flower.

No. 3. Eight-petal flower-form with cross in centre. Groundwork or lines for ornamental square panel decoration.

Nos. 4 and 5. Geometrical diapers for colours or glazing with tinted glass.

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No. 6. Eight-pointed star in vesica, with four divisions filled in with flamboyant lines. May be filled in with tracery or foliage.

No. 7. Cross arrangement formed by semicircles interlaced; the angles being indicated as filled in with flower-buds. The same general form may be ornamented and varied in a number of different ways, still retaining the leading lines. The form is a very ancient one, and was much used by the early Christians. The cross vesicas, Fig. 226, was another favourite and early arrangement. Probably, in times of persecution, they were valued as being emblematical of the cross, without having an actual cross too plainly indicated.

No. 8. Six-petal flower-form or "kite star," with spherical triangles on the hexagon, contained in a circle and square. This combination of spherical triangles, when repeated, gives the lines of what is known as the "Canterbury diaper," which is a very elegant diaper sculptured in stone in low relief on the south side of the choir. It is there filled in with six-petalled flowers and trefoils.

No. 9. Combination of square and five circles in the form of a cross or quatrefoil, for glazing or marble inlay.

No. 10. Interlaced guilloche bands, for diaper in low relief filled in with colour.

No. 11. Combination of square with double diagonal bands and crosses at the intersections for glazing. Without the crosses it forms a well-known pattern for glazing, often found in Elizabethan and other old English houses.

No. 12. Hexafoil, containing concave-sided hexagon and six-petalled flower.

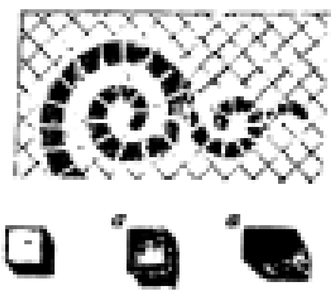
No. 13. Trefoil intersected by the triple petals of the snowdrop. Centre for glazing in tinted glass.

CHAPTER XIX.

INLAYS, LABYRINTHS, AND DIAPERS.

THE practice of inlaying one material with another for purposes of decoration is of very great antiquity, as is shown by Egyptian and Assyrian specimens of such work preserved in the British Museum. How far this art was practised by the ancient Greeks we do not precisely know, as so few examples of their inlay have been handed down to us, but we read of a mosaic pavement in the temple of Olympia, and of the colossal statues made by Phidias being formed of gold, ivory, and ebony, and inlaid with precious stones. Among the Romans, whose desire for magnificence led them to adopt every kind of costly enrichment, inlaid floors of the most elaborate and elegant character came into very general use, not only in Rome, but to some extent in every country which they at any time occupied. Many beautiful examples of these inlaid floors have been brought to light in England, and others are still being occasionally discovered. They were mostly formed of small fragments or cubes of terra cotta or marble, technically called *tesseræ*, Fig. 240. These cubes, seldom more than three-quarters of an inch square and often less (*a a*, Fig. 240), were set in cement, and combined into various geometrical and other figures, the colours and patterns being produced by the

Fig. 240.



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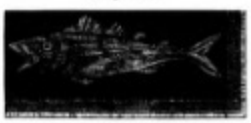
different kinds of marble or other materials used. The art reached such perfection that tesselated pavements embraced representations of human figures, animals, and fishes, as in the example Fig. 241, from an ancient Roman mosaic in the South Kensington Museum. Landscapes, flowers, and foliage were also depicted with equal success.

Fig. 241.

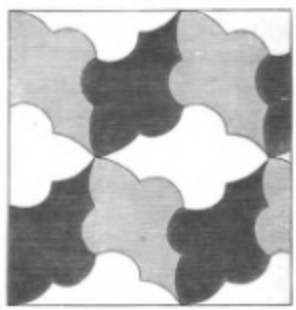


Probably the most notable specimen of ancient mosaic that has come down to us, is a battle piece discovered at Pompeii in 1831, and now preserved in the museum at Naples. In this remarkable work, the subject of which is one of Alexander the Great's Asiatic victories, men and horses in action are represented with great spirit, the figures being nearly as large as life.

The process of forming pavements and other works in ceramic tesseræ has been of late years pursued in England with great success. A frieze of this description, of large size, has been executed, surrounding the whole of the exterior of the Royal Albert Hall at South Kensington. The colours used were only three in number: buff for the figures, which were outlined in black, on a chocolate ground, and the sizes of the tesseræ varied from about a quarter of an inch to one inch square.

The Romans frequently adopted another method of constructing mosaic pavements, which was called *sectile*, or sliced work. This was formed of different slices of choice marbles, which produced their effect solely by contrast of the shape, colour, and veining of the various kinds which were brought together. The finest specimen of sectile work now extant is the pavement of the Pantheon at Rome, where specimens of the principal marbles, each of great superficial extent, are arranged in alternate round and square slabs. A similar species of marble paving is frequently met with in early mediæval buildings in Italy, as in the example Fig. 242, from the church of St. Francis at Assisi. It consists of a triangular arrangement of similar forms in white, gray, and red marbles.

Fig. 242.



From the middle of the fourth century, when Christianity began to extend itself over Europe and the seat of the Empire had been removed to Constantinople, the oriental taste for gold and splendour superseded the purer practice of the Romans, and Byzantine glass mosaic came into fashion. Mosaic was extensively employed by the Byzantines for wall decoration and for the enrichment of vaults and ceilings. It was used to some extent on the exteriors as well as in the interiors of their buildings. The pieces of opaque glass, or coloured enamels, employed in this kind of work were very irregular in size and shape, and the ground upon which the subjects were represented was almost invariably of gold. A great variety of shades and tones of colour were produced in these glass enamels, and the material for the gold grounds was formed by placing gold-leaf between two sheets of clear glass, which were then put into a kiln

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and heated until the whole became homogeneous. The sheets were then broken up into the required sizes.

The manufacture and working of this species of enamel mosaic, known as Venetian or Byzantine, has been successfully revived by Dr. Salviati, who has established works at Murano near Venice. Many examples of this work have been put up in this country, such as those executed by him at the Albert Memorial, Hydepark. The enamel is cut into shapes not quite regular, and these are put together more or less near to each other, so that between them the joints are plainly seen, and the surface is left *rough*. Another kind of mosaic is that which is formed in Rome, where the work —different from the Venetian—is made thoroughly *smooth* by rubbing or polishing the surface, and the stone or enamels have their edges fitting closely one to another.

The best specimens of this kind of pictorial wall-mosaic are to be found in St. Peter's and in the recently rebuilt church of St. Paul outside the walls, Rome. The gigantic pictures of the four evangelists that adorn the pendentives under the dome of St. Peter's, and the long series of circular pictures (each about four feet diameter) introduced as a decorative band along each side of the nave of St. Paul, representing portraits of the popes from St. Peter onwards, are in rough surfaced mosaic. These pictures have the effect of frescoes of great excellence, and are imperishable in colour. The portraits of the popes in St. Paul were executed at Rome within the last thirty years.[1] But the most perfect specimens of pictorial wall-mosaic are the copies from pictures by Raffaele and other great masters which are placed in some of the chapels of St. Peter's. In these the drawing, expression, colouring, and general effect are so well rendered, and the fitting together of the tesseræ so perfect, that they impress the beholder as paintings of rare merit. Most of the pictures are reproduced on a scale much larger than their originals, and the surface of the mosaic being polished they present the appearance of paintings in oil. These examples, however, although put together with such rare perfection, are not considered so good for the purpose of wall decoration as the earlier, although rougher and coarser, mosaics of St. Mark at Venice, or Monreale in Sicily. Mosaics have a character of their own, which necessitates a certain conventional manner, and all attempts to make them look like pictures in oil for wall decoration should be avoided. Miniature works in mosaic continue to be produced in Rome and in Florence for the decoration of jewelry and other ornamental articles.

In the mediæval styles of England wall-mosaics do not appear to have ever been prevalent, but there cannot be a doubt that English artists painted and diapered their walls and ceilings upon the same principle, and even in some cases in imitation of inlay. Of this a notable example is the very early painted ceiling of the nave of Peterborough Cathedral. Almost the only example we possess of the glass or enamel mosaic of the middle ages is that which still partially remains upon the tomb of Henry III. in Westminster Abbey. The shrine of Edward the Confessor, which was erected by Henry, has been also richly inlaid with mosaic work, but it is now nearly all destroyed or picked out;. the forms, how-

[1] The atelier of the Vatican is said to possess material for mosaic work in above three thousand tints and shades.

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ever, of the inlay are still discernible upon the cement in which it was embedded. The floor of Edward the Confessor's Chapel is very richly inlaid with various kinds of marble, and the pavement before the altar of the Abbey is of a similar description. The materials of this pavement were brought from Rome by Abbot Ware about 1267. Portions of another richly inlaid marble floor are seen in the Trinity Chapel of Canterbury Cathedral. This contains the signs of the zodiac in circles, but one portion of the same pavement is filled in

Fig. 243.

with geometrical combinations of marble, porphyry, &c. Fig. 243 presents a specimen of this inlay. All these works are no doubt of foreign origin, most probably Italian.

A form of flint inlay, which is found upon the exteriors of the fourteenth and fifteenth century churches in Norfolk and Suffolk, is also worthy of a passing observation. It consists of the forms of tracery, inscriptions, or monograms, cut out in free-stone, the spaces being then filled in flush with the stone work with split and square flints. The difference of colour developing the forms in strong contrast, the effect is rich and pleasing, and gives a distinctive character to the churches of these counties which is not found in any other part of England.

The large marble floors of the naves or transepts of some cathedrals, more especially on the Continent, were sometimes laid out in the form of *labyrinths*. No. 1, Plate 46, is similar to one which existed in the church of St. Bertin at St. Omer, and which is said to have been destroyed because the children and strangers in following its course disturbed the services of the church by their noise. No. 2 is the plan of a circular one which still remains in the Cathedral of Chartres. Such labyrinths were generally placed near one of the entrances, and were supposed to be emblematical of the manner of approaching the temple at Jerusalem: because during the time of the crusades the way which led to the temple was marked by a number of turns and stopping places, in which the pilgrims remained to pray before reaching the holy place. In like manner pilgrims went on their knees upon these labyrinths, praying at every turn, and patiently followed the tortuous course until they arrived at the centre, which was considered the holy place.

Another excellent mode of enriching pavements was by incising the form, and filling the incisions with black or a dark-coloured cement. Several monumental tablets at Tintern Abbey, and part of the pavement at Canterbury Cathedral, representing the four seasons and the signs of the zodiac, already referred to, are of this description. This method of incising pavements is well worthy of study and further development for modern work, as it has a very excellent effect and does not involve so much labour as inlay. The wall decoration in the memorial chapel to Prince Albert at Windsor, done by Baron Trequeti for the royal family, as well as some of the pavements which have been executed by other artists in the restoration of our cathedrals, are also of this description. A good modern example

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is that in the choir of Gloucester Cathedral by the late Sir G. Gilbert Scott. The subject is the life of man from Adam to Jesus Christ.

In the manufacture of *encaustic tiles* the ornament is produced by an inlay of a coloured clay different from the body of the tile. The original tile, which is usually of red clay, is formed under great pressure by means of a steel die, which stamps the pattern on the face to about one-eighth of an inch in depth. When the tile is dry, but before being burned, a yellow clay, technically called a *slip*, is made up to about the consistency of cream and poured over the face of the tile, completely filling up the incised portion. After this has been allowed to dry, the superfluous clay is removed by the aid of a steel scraper, and the tile is ready for the kiln. When more than one colour is required for the ornament upon the tile, the more expensive colour, such as blue, is carefully poured into those parts required to be of that colour, and when this is dry the yellow slip is added. Care must be taken that the clay used for the slip is not liable to shrink in the burning, or cracks will be produced between the inserted clay and the incised form.

During the seventeenth century a species of wood inlay, called *marquetry*, was applied very extensively to the ornamentation of furniture. It was formed of thin veneer, and required a considerable amount of skill in its execution. Flowers, birds, and other objects were imitated by different coloured woods, and shaded by partially burning the surface with a hot iron. This was done with remarkable exactness to nature, but the result was rather too like a laborious and inferior imitation of a painting than a work of art. Another kind of wood inlay, of a larger and much simpler description, termed *parquetry*, has been long legitimately applied to floors, especially upon the Continent, where the use of carpets is not so common as with us.

Flat diapers are very much of the same character as inlays, and may, of course, be executed in the same manner; but they are more frequently done for wall decoration by painting, stencilling, or by printing, as on wall-papers. Examples are given for these on Plates 47, 48. Sculptured diapers in stone, as found in Westminster Abbey and other places, already referred to, Chap. xvi., are exceedingly costly from the great amount of labour they incur; but a very similar effect and with equal beauty may be obtained by the use of terra cotta. In fact, this is one of the many legitimate uses of terra cotta, where one mould will produce an unlimited number of the same forms in a material which is comparatively indestructible, and that will effectually resist the influence of the atmosphere for an incredible length of time. And it seems a more reasonable process than to set men laboriously to carve repetitions of the same forms over the whole surface of a wall.

Plate 46.

No. 1. Labyrinth inlaid in marble of two colours, somewhat similar to one which existed in the church of St. Bertin at St. Omer.

No. 2. Circular labyrinth from the nave floor of Chartres Cathedral, formed of blue and white stone inlay; other colours are also used in different parts.

No. 3. Flaming star with coronet and date, for inlay.

No. 4. Panel with centre cross, borders, and other portions of various designs, for geometrical inlay or parquetry.

Nos. 5 and 6. Strap and geometrical inlay border.

No. 7. Border with combinations of right-angled triangle.

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No. 8. Foliated inlay border with scalloped edges.

No. 9. Inlay border, white and black interrupted hexagons.

Nos. 10 and 11. Chinese or Japanese geometrical diapers, for painting on porcelain or for inlay. These are both formed on the triangle and hexagon.

Plate 47.

No. 1. Triangular interlacing bands for diaper for parquetry or other inlay, with stars at the intersections of the white bands.

Nos. 2 and 3. Variations upon the last combination, with flowers at the intersections, and cubes filling in between the triangular bands. A combination of cubes formed upon the hexagonal lines, in black, white, and gray marble, was a favourite form of pavement in the last century. It is, however, a very objectionable pattern, from its representing the cubes as if in perspective with one angle standing up,—thus losing the character that pavement should have—that of looking flat and even for walking upon.

No. 4. Interlaced incised line, on white stone or marble filled in with black cement. Four varieties of borders, incised and filled with cement. The broader bands may be filled with cement of a different colour, or inlaid with coloured stone or marble.

Nos. 5, 6, 7, and 8. Foliated diapers upon imbricated or fish-scale lines, for painting, stencilling, or wall-papers.

Nos. 9 and 10. Geometrical tile pavements, on triangle, and one form fitting by reversing into each other.

No. 11. Border of interlaced ribbon, formed by incised line, and filled in with black or coloured cement. The ground tooled in lines to give variety of surface.

Nos. 12 and 13. Upright foliated and geometrical designs, for painted dados for rooms, or for executing in paper.

No. 14. Marquetry border for woods of various colours and shades.

Plate 48.

No. 1. Incised brass filled in with black cement, the broader portions with colour. A crest formed of a mason's lewis with the motto "Hold fast," for the name "Lewis."

No. 2. Panel for line-painted decoration, with ground filled in with colour. Continuous ribbon, with variations upon the motto "Amour par tout."

No. 3. Panel for painted decoration upon the same motto in English, "All for love," with continuous line forming hearts and true lover's knot, filled in with shamrock foliage.

Nos. 4, 5, 6, and 7. Four varieties of four-leaved diaper, with four other varieties of leaves at the sides. For painting, stencilling, or wall-paper.

No. 8. Centre of interlaced crescents.

No. 9. Centre containing triple arrangement of oak foliage in two colours.

No. 10. Star and cloud diaper.

No. 11. Diaper formed of triple gyrating cones and lines.

No. 12. Alternating letter Z diaper.

No. 13. Fish diaper with conventional water.

Nos. 14, 15, 16, and 17. Fret and open-line diapers or filling-in, for enrichment of surface in china or porcelain.

No. 18. Alternate-leaved bands for surface decoration. One-half of band may be also applied to metal cresting.

No. 19. Outline fleur-de-lis, leaf, and berries, for pattern of textile fabric.

No. 20. Acorn-and-heart enriched band for painting.

No. 21. Stencil pattern for self-tone decoration—that is, the ornament stencilled in the same colour as the ground but darker, or *vice versa*.

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CHAPTER XX.

BLAZONRY AND HERALDIC ORNAMENT.

IN Heraldry the term Blazonry is applied to the description and to the representation of all heraldic figures, devices, or compositions, as well as to the arrangement of the component members and details of any heraldic composition. The word, here used in its most extended signification, carries us back to a very early period, when it was the prevalent custom for both individuals and communities to be distinguished by some *sign*, *device*, or *cognizance*.

War and the chase would naturally furnish the first forms and figures, worn upon some part of the person or emblazoned on the shield as a mark of distinction. A man's physical powers or peculiarities as a warrior or a hunter, or the issue of some exploit in which he may have been engaged, would, in many cases, determine his distinctive personal cognizance. If swift of foot, or strong of hand, or fierce in demeanour, or patient of hardship, he would naturally seek to symbolize himself under the form of some animal distinguished pre-eminently for one or other of those qualities. For it is natural that man should find symbols of his own physical attributes in the inferior animals; because in mere swiftness, or strength, or such like qualities, certain animals are superior to man. The next thing would be to render this personal symbolism hereditary. A man's son would feel a natural pride in preserving the memorial of his father's reputation, by assuming and also by transmitting his device. It would be the same with the comrades of a chief and with the subjects of a prince. Thus a system of heraldry would gradually rise and become established.

Nearly six hundred years before the Christian era Æschylus described the heraldic blazonry of the chieftains who united their forces for the siege of Thebes. The well-known eagle was the symbol of ancient Rome, the standard of Persia was an eagle displayed, and the state of Athens was distinguished by an owl.

It is, however, to the Crusades, which were begun in the year 1096 and terminated about 1270, that we owe in a great measure the mediæval system of heraldry, and the emblazonment of arms on shields. Among the many and important results of those romantic enterprises were great changes in the weapons and armour of the Western chivalry; and these changes were accompanied by the introduction of an infinite variety of armorial devices, especially the adoption of crosses of various forms and colours. The Crusade confederacy would necessarily require a more definite system of military standards and insignia than had previously prevailed. The use of improved defensive armour also, combined with a better system of organization and discipline

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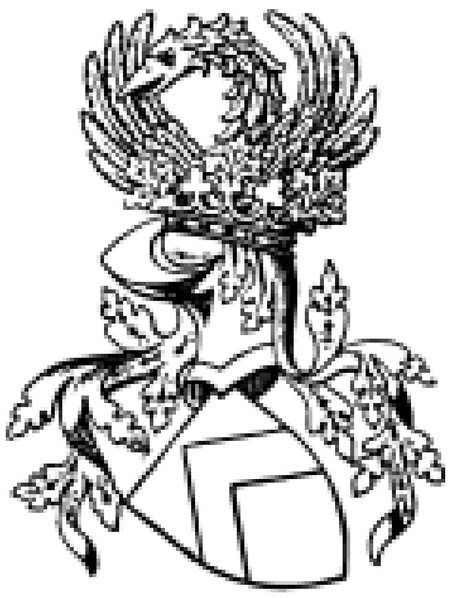
in the armour-clad bands, rendered it necessary for each warrior of any rank to assume and wear a personal cognizance, without which he could not be distinguished on the battle-field, where the known presence of certain individuals was of grave importance. The device of each baron and knight would naturally be assigned, with certain modifications, to their respective retainers and followers. For this reason *crests* were introduced and placed on bascinets and helmets, Fig. 244,[1] and some recognized device was displayed upon all knightly pennons or banners. These were again emblazoned upon the rich surcoats worn by the knights over their armour, and upon the coverings of their chargers, as well as upon the shields borne by the warriors (No. 4, Plate 50). Such is the origin of *Coats of Arms*, a term which is still in common use at the present day.

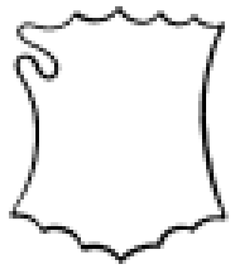
Fig. 244.



In England, during the reign of Henry III. heraldry assumed a more definite character than it had done before, and in the long and brilliant reign of Edward III. it attained its culminating point. Again, during the Lancastrian era and throughout the wars of the Roses heraldry maintained its reputation and popularity, but with the decline of Gothic architecture it too showed signs of a coming degradation. Such has been its long and gradual rise and its decadence; and although now somewhat in the position of a dead language, still its use is never likely to be abandoned so long as pride of rank exists, and individual and family distinctions are required. Heraldic compositions are of extreme value as historical and genealogical evidence, and if rightly understood may yet become a powerful auxiliary in the ornamental treatment of symbolized forms and images.

Early heraldic shields vary very considerably in their forms, the simplest having the contour of an inverted pointed arch, somewhat stilted, as shown at No. 2, Plate 50. The shields used by the Normans in England were long and tapering, as seen borne by the knightly effigies in the Temple Church, London. To these succeeded almost triangular, heater-shaped shields. In later times their forms were often of the most fanciful description. Fig. 245 represents the form known as the Tudor shield. It has a notch on one side for the support of the lance used in tournaments. The ground or surface of the shield is called the *field*, and here are depicted the figures or charges which make up the coat of arms. The side of the escutcheon which is opposite to the left hand of the person looking at it is the *dexter* or right side of the shield, and that opposite the right hand the *sinister* or left side.

Fig. 245.



The tinctures, or colours generally used in heraldry comprise two metals and five colours, and are named:—

Or, ... Gold or yellow, *represented in engraving by* dotted work.
Argent, . Silver or white, *always left* plain.
Gules,... Red,..... perpendicular lines.
Azure, ... Blue,..... horizontal lines.

[1] See also the examples Nos. 1, 4, 5, 6, Plate 50; and others in following plates.

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Sable, ...	Black, ...	horizontal and perpendicular lines crossing each other.
Vert, ...	Green,.....	diagonal lines from right to left.
Purpure,	Purple,.....	diagonal lines from left to right.

It is an invariable rule in blazoning that metal should never be placed upon metal, nor colour upon colour.

There are also what are called *Furs*, which are not only used for the linings of robes and garments of state, the linings of the mantle, and other ornaments of the shield, but also in the coat armours themselves. Those in most common use are:—

Ermine, represented by sable spots on a white field, Fig. 246; *Ermines*, a black field with white spots, Fig. 247; *Erminois*, a gold field with black spots,

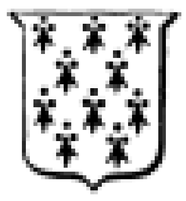

Fig. 246.—Ermine.

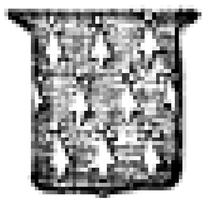

Fig. 247.—Ermines.

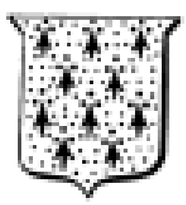

Fig. 248.—Erminois.

Fig. 248; *Vair* white and blue, represented by small escutcheons placed in a line, Fig. 249; *Counter-Vair*, small escutcheons, placed base against base and point against point, Fig. 250; *Potent*, the field covered with figures like crutch heads, termed potents, Fig. 251; *Counter-potent*, having the

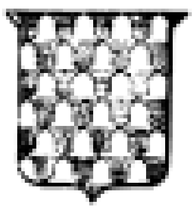

Fig. 249.—Vair.

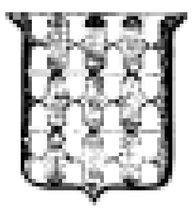

Fig. 250.—Counter-Vair.

Fig. 251.—Potent.

figures arranged after the manner of counter-vair, Fig. 250.

Shields are divided by lines, called *Partition-lines*, which are distinguished by different names according to their several forms. The shield is said to be *party* or divided by these lines, as *Party per pale*, when it is divided equally by a perpendicular line, as No. 7, Plate 50; *Party per fess*, when equally divided by a horizontal line, No. 3, Plate 50, and No. 5, Plate 54; *Party per cross* or quarterly, when the field is divided by two lines, the one perpendicular and the other horizontal, as in the sinister shield, No. 6, Plate 50, and in the royal arms No. 12, Plate 53. These all admit of being engrailed, wavy, embattled, dovetailed, &c., and have diminutives.

The earliest devices upon the shield are simple figures called *Ordinaries;* these are nine in number, and each admits again of being engrailed, &c., as with the partition lines of the shield.

1. The *Chief*, Fig. 252, formed by a horizontal line, contains in depth the uppermost third part of the field. No. 8, Plate 53, is an example of a chief wavy, and No. 9 a chief embattled. The diminutive of the chief is the *Fillet*, the contents of which must not exceed one-fourth of the chief, of which it always occupies the lowest portion.

2. The *Pale*, Fig. 253, consists of two perpendicular lines, drawn from the top to the base of the shield, and occupies one-third of its centre. The pale has two diminutives—the *Pallet*, one-half of the pale in width, and the *Endorse*, one-half of the pallet.

3. The *Bend*, Fig. 254, is formed by two parallel lines, drawn from the dexter chief to the sinister

Fig. 252.—Chief.

Fig. 253.—Pale.

Fig. 254.—Bend.

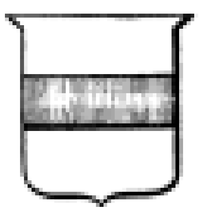

Fig. 255.—Fesse.

base. It contains a fifth part of the shield in breadth if uncharged, and a third part if charged. No. 1, Plate 51, and No. 6, Plate 54, are examples, which would be described as being charged with stars in the first case, and with three escallop-shells in the second. The diminutives of the bend are the *Bendlet*, one-half the bend, and the *Cotise*, one-half the bendlet. A bend when issuing from the sinister instead of the dexter chief is distinguished as a *Bend Sinister*, No. 5, Plate 50.

4. The *Fesse*, Fig. 255, is formed by two horizontal lines, occupying one-third part of the field, and is always confined to the centre.

5. The *Bar*, Fig. 256, is the same as the fesse, but it occupies only one-fifth of the field. The bar is

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