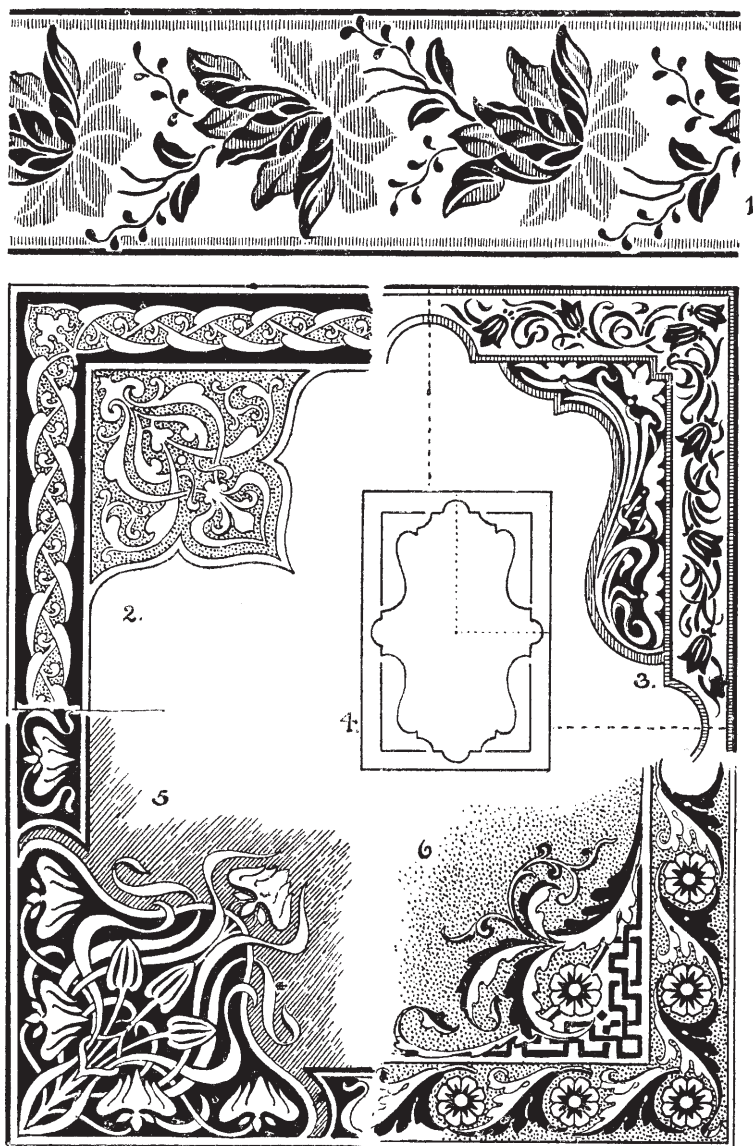


VERTEBRATE OR RUNNING BORDERS.



DESIGN FOR CORNERS AND ANGLES.

BORDERS, CORNERS, ANGLES, ETC

from any set lines, is not far removed from a vertebrate border, the stems of the flowers, if carried through from one to the other, forming an irregular wave line. The other designs in PLATE XXXII. illustrate different treatments of angles in rectangular fabrics. They are more appropriately introduced into some fabrics than others; for example, they may be more effectively used in hearthrugs or carpet squares than in such fabrics as linen or tapestry tablecloths, because in the former their normal flat position gives due value to any ornament which the angle may have, whereas in a table-cover it would be almost entirely lost by the unavoidable folding of the cloth at the corners of the table.

The main purpose of an angle ornament is to break the rigid rectangle of the corner, but care must always be taken that its general form or contour is good, and also that it leaves a pleasing shape in the field of the fabric. This may be better understood by reference to FIGS. 3 and 4, in which the angle ornament of FIG. 3, when repeated in the four quarters of the design, produces an agreeable panel shape, as seen in FIG. 4. The shape of the corner in this instance is only suitable for a fabric that is oblong in shape—a hearthrug, for instance. FIG. 2 is perhaps best adapted to a square shape, though it might be used for an oblong without causing any sense of incongruity. In FIG. 5 the corner is made to break into and interrupt the border; this may be more clearly shown by reference to DIAGRAM 29, p. 123. This design is symmetrical on the mitre line, as also is FIG. 2. In FIG. 6 the angle ornament is free in so far as the field of the design is concerned, being only bound by the shape of the border. It is not enclosed within any definitely shaped panelling, as in FIGS. 2 and 3, and it is not symmetrical on the mitre line, as in FIGS. 2 and 5.

Stripes.—A few of the more elementary forms of stripe ornament, such as those which consist of little more than parallel straight lines running in the direction of the warp

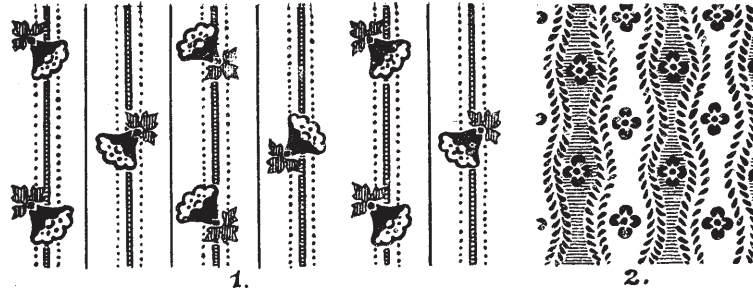
ORNAMENTAL DESIGN

threads, have been already referred to in the chapter on Geometrical Design, PLATE IV. There are certain practical advantages in stripes which probably count for something in explaining their use, such as the added appearance of height which is suggested by a stripe used vertically, and it is a common practice on the part of dressmakers to recommend striped dress fabrics to people who are short in stature in order that a greater sense of height may be given; on the other hand, stripes used horizontally have the opposite effect, and suggest increased width and decreased height.

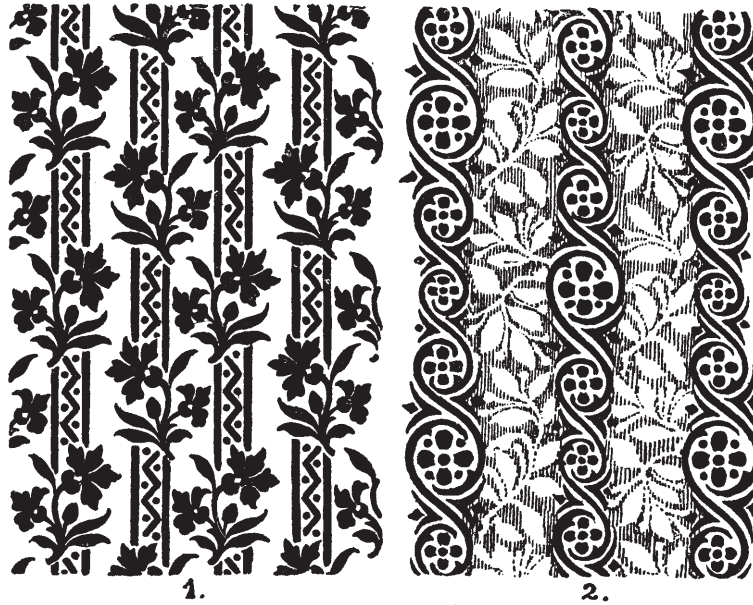
FIG. 1, PLATE XXXIII., gives a simple form of stripe in combination with a powdering of conventional flowers arranged at angles of 45° and pointing in different directions. FIG. 2 is an instance of a curved stripe based on reversed wave lines, while FIG. 3 consists of parallel wave lines broken with conventional ornament growing from the sides. FIG. 4 is an instance of a stripe crossing the fabric in a diagonal direction; the inclination of the stripe follows the diagonal of the rectangle which contains the repeat, and in this case, the repeat being a square, the stripe is at 45° ; if the repeat were an oblong, the direction of the stripe would be greater or less than 45° , according to the proportions of the oblong. Fig. 5 gives a more elaborate example of stripe ornament with three distinct contrasting stripes repeated.

FIG. 1, PLATE XXXIV., is an example of a straight stripe superposed by an all-over sprig pattern, and is taken from an old Italian velvet; FIG. 2 has a naturalistic stripe contrasting with a very conventional one, while FIG. 3 is a reproduction of an old Spanish fabric showing two stripe effects recurring alternately.

PLATE XXXIII.



DESIGNS FOR STRIPES.



DESIGNS FOR STRIPES.

CHAPTER IX

LAWS OF ORNAMENTAL COMPOSITION

ALTHOUGH this chapter will be devoted entirely to elucidating the principles that should guide a designer in planning out all-over patterns, this does not necessarily mean that it is the only place in which the principles are taught or indicated. On the contrary, every chapter in the book indicates more or less the practical application of the principles which are here specially dealt with. Almost every good design—perhaps one might be safe in saying every good design—is an illustration or an embodiment of the principles. They have already been illustrated in the designs included in the chapters on practical planning, but in too incidental a way to be easily perceptible to a student. In this chapter all the principles will be taken separately, and illustrated by diagrams and designs in which some one principle makes itself particularly evident. The designs will also be pulled to pieces in order to expose the principles upon which they are based.

The principles that are necessarily involved in the production of good repeating patterns are :—Repetition, balance, symmetry, contrast, variety, tangential junction, radiation, growth, stability, subordination, repose, fitness, unity, and proportion.

ORNAMENTAL DESIGN

Repetition is the first principle dealt with and is perhaps the most important one to observe when designing for textile fabrics.

An all-over repeating pattern implies in itself the idea of repetition. It is possible, of course, to have an all-over design that does not repeat, as in the case of some hand-made carpet squares, though such a design might equally well be spoken of as a panel. Besides carpets, there are a few other cases where a large space is covered with all-over ornament without repeat ; for instance, in some hand-made embroideries for hangings the ornament is powdered over the whole surface without thought of its repeating. Such a treatment is beyond the scope of this book because of its inadaptability to fabrics produced on the loom ; but it is useful in comparing the inherent value of the principle of repetition as compared to a non-repeating all-over design.

There is undoubtedly some value in the principle of repeating details, in addition to the convenience of easy and cheap reproduction. An extended all-over design without a repeat—such as would possibly be used for drapery hangings—might, one could easily imagine, make itself extremely wearisome to the eye for want of some recurring feature to rest upon. The eye cannot wander about incessantly from one part to another over details that are all of equal importance without becoming wearied. True, one could make some of the features more important than others in a non-repeating design, so that the eye would have points on which to rest itself ; but these features or “spottings” would presumably take an irregular form, both as to size and position, otherwise, if they had an appearance of regularity without being actually regular, they would to all intents and purpose be repeating designs.

The argument resolves itself, then, to this : that the eye must have some parts of more marked character than the others upon which it may rest. If so, is it better that

LAWS OF ORNAMENTAL COMPOSITION

those characterising features should be arranged to repeat, or be erratic? Looking at the question entirely from an

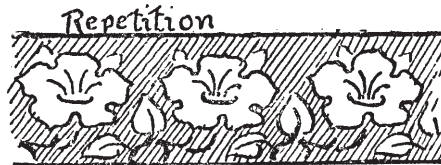


DIAGRAM 33.

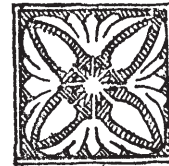


DIAGRAM 34.

æsthetic standpoint, without any thought as to cost, perhaps it might be more interesting if the subsidiary detail was not made to repeat exactly, but some slight variations allowed that would not upset the general balance of the repeats. It would undoubtedly be more interesting; but then the advantage would be so slight that custom has seldom sanctioned it except in the most expensive work, such as hand-made tapestries for decorative hangings, &c., which, however clever they may be, are liable to appear wanting in the repose that is desirable in designs used as backgrounds, and it is important to remember that textiles should take this secondary or background position in relation to the human figure or the principal features of room

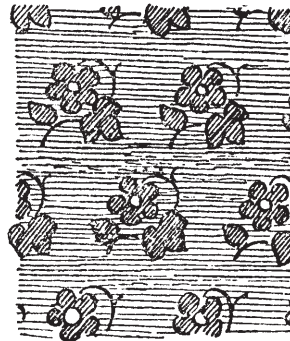


DIAGRAM 35.

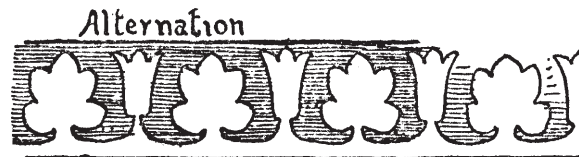


DIAGRAM 36.

furnishings. Repetition has therefore distinct advantages, ornamentally speaking, in giving restfulness to a pattern.

ORNAMENTAL DESIGN

DIAGRAMS 33, 34, 35 illustrate respectively banded repetition, fourfold repetition, and all-over repetition. Alternation, as in DIAGRAM 36, is really a variation of repetition, and is very useful in effecting a contrast to avoid monotony.

The two following principles, *contrast* and *variety*, need to be strongly recommended to the student. A design from

Contrast of Shapes.



DIAGRAM 37.

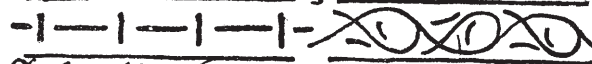


DIAGRAM 38.

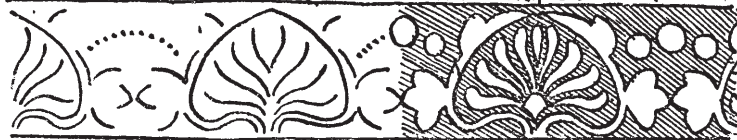
which these two principles are absent will be monotonous and uninteresting; it is necessary to have contrast of shapes, of proportion of masses, and direction of lines. DIAGRAM 37 is the simplest possible example of contrasting shapes—a circle and two narrow upright bands. In this instance there is a contrast both of shape and proportion—the curved figure contrasts the straight figure, and also contains a much larger area than the straight bands. The example is a very primitive and simple one, but still the principle is the same in this as in a more intricate design.

DIAGRAM 39 is an example of quite a different kind of contrast—viz., contrast of line. It is important that the

Contrasting Lines.



Contrasting Lines and Shapes.



DIAGRAMS 39, 40, 41.

student should clearly distinguish between contrast of line, of shape, and of proportion. The diagram is a

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simple border composed of horizontal and vertical straight lines, but, simple though it be, it contains the elementary principle of contrasting lines. Of course it is not a pleasing arrangement ; the contrast is both too violent and too evident. As has been said before, the construction of a design must not be visible, but must be ingeniously hidden ; the same remark applies to the principles, which, to be successful, must be applied without undue assertion.

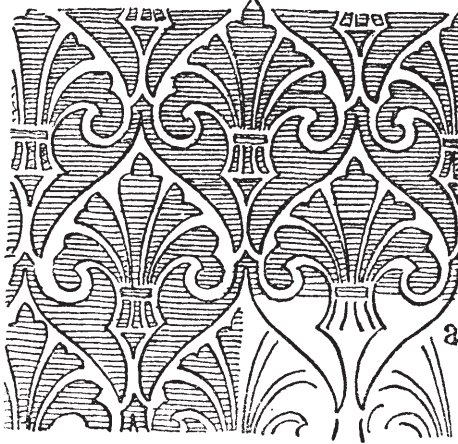


DIAGRAM 42.

In the next example, DIAGRAM 40, the principle is applied to curved lines. The branches which diverge from the centre wave line turn back and cut this wave line again almost at right angles, and the two small lines at each side of the branch, if produced, would also cut the continuous wave stem at right angles. DIAGRAM. 38 illustrates this same principle of cutting one line with another at a right angle or thereabouts.

DIAGRAM 41 is composed mainly of a series of heart-shapes placed at a little distance from one another. Inside the heart-shapes is a series of radiating lines ; these lines, in general direction, are about at right angles to the heart-shaped lines. Again, these heart-shapes are joined together by three ball spots that take a curved line which at each end cuts rectangularly to the curve of the heart-shape.

DIAGRAM 42 is an all-over pattern in which the principle of rectangular contrast is well illustrated.

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DIAGRAM 43 is not intended as a design, but is a diagram illustrating contrasting lines in all directions. The lines

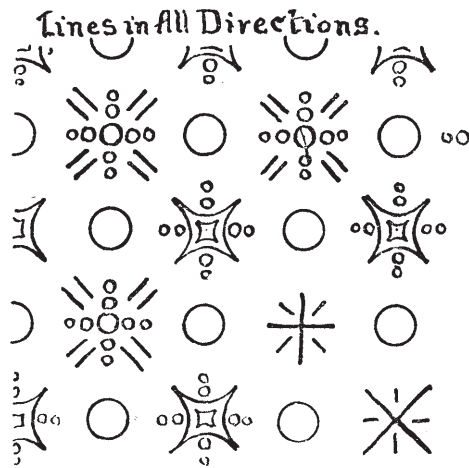


DIAGRAM 43.

take a horizontal, vertical, and diagonal direction. The circles serve the purpose of fixing the eye on certain points and not allowing the attention to wander in any one direction. To obtain a thoroughly well-balanced all-over design this principle of contrast in all directions must

be carefully observed, otherwise there is a danger that too many lines will fall into one direction, and thus cause faulty "lining." To this rule there is an exception: it is legitimate if the fabric is ultimately intended to occupy a vertical position, as many fabrics are, to allow a preponderance of lines pointing upwards, as in the case of most of the lines in DIAGRAM 42.

This principle of contrast does not apply only in such examples of the set and rigid character as just given, but also to designs of the most elaborate foliated description, such as those on PLATE XXXV. and elsewhere. The reason why the more rigid designs have been used is because the principles are thus made more evident. In FIG. 1, PLATE XXXV., the large turned-back leaf cuts sharply across the stem (A). In FIG. 2 the crown-shaped device cuts rectangularly across the vertical stripe and serves to break the monotony of the straight lines. In FIG. 3 the foliated wave line cuts across the ribbon wave also at right angles, as will be more clearly seen by referring to the



ILLUSTRATIONS OF CONTRAST AND VARIETY.

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adjacent diagram, FIG. 4, at the points marked A. The same rectangular principle is illustrated at the points A in FIGS. 5 and 6.

A word of warning may be put in here. Do not drive any principle too hard ; if you do the result will be crude and unpleasing. A writer on ornament has said that "rules make good servants, but bad masters." Rules can only be used for guidance ; they serve to indicate what must *not* be done quite as much what to do and how to do it. A design worked out only on principles, without the guiding hand of taste and ingenuity, will be dry and uninteresting, if not even objectionable.

FIG. 7 illustrates a case in which the principle of contrast is driven too hard, causing a want of repose. The line which passes under the spray and cuts across itself several times is more suggestive of fireworks than ornament. In FIG. 8 the same material is used to much better service. Most of the lines are made to radiate from one point at the base or start of the spray. There is a certain amount of contrast of line between the veins and the serrations. The shading on the leaves also lends a softening quality to the whole design.

There is no principle that should be more insisted upon than the principle of *variety*. Variety is the very essence of a design, the principle that gives it brightness, interest, and diversity. FIG. 9 is a drawing of a conventional flower, and FIG. 10 is a diagrammatic rendering of the same, showing the variety of direction that can be put into one small detail. FIG. 11 is a small portion of a design which is marvellously rich in its variety of details. FIG. 12 is an example of the introduction of contrasting variety in the treatment of details in one design.

Turning to DIAGRAMS 44 to 47, we have several illustrations arranged on the principles of *symmetry* and *balance*. A symmetrical arrangement is one in which the ornament

ORNAMENTAL DESIGN

is exactly repeated on each side of a straight line, as in

Symmetry.

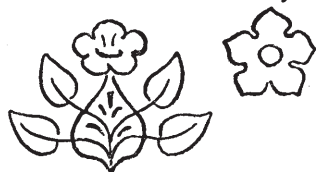


DIAGRAM 44.

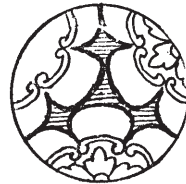


DIAGRAM 45.

DIAGRAMS 44 and 45, and also in the details of the two border designs, DIAGRAMS 36 and 41, and the all-over pattern,

DIAGRAM 42. Designs that are symmetrical are usually of a severe and formal character, and in the case of repeating patterns the repeats are easily detected. In cases where the severity of a symmetrical arrangement is undesirable, a design in which the principal masses are balanced instead of being rigidly repeated at both sides may be advantageously used. DIAGRAMS 46 and 47 illustrate the principle of balance; thus, if a straight line be drawn down the centre it will be found that there will be about an equal quantity of ornament on each side of the line without exactly repeating the details. The decision as to how much should go on one side or on the other is a question that is necessarily relegated to the designer's sense of proportion. In the two examples given the details on one side are quite different to those on the other, but yet the quantity is about the same in each. This question of balance enters more or less into every design.

Balance



DIAGRAM 46.

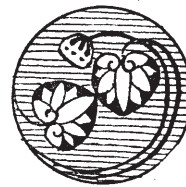


DIAGRAM 47.

The *tangential junction* of lines is also an important principle, and to it is due much of the grace of form to be found in the best designs. The term is adapted from the geometrical problem where a circle comes in tangential

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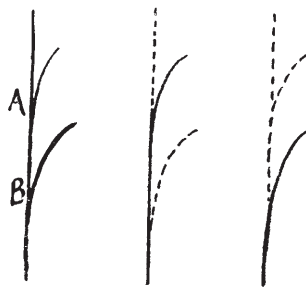
contact with a straight line ; the straight line is then said to be tangential to the circle. In the first examples given, the two curves A and B are tangential to the straight line in such a way that if the upper portion of the straight line and the curve B (which are dotted in the second diagram) were taken away, the curved line and the portion of the straight line remaining would form a good and unbroken line.

The same explanation applies to the joining of curved lines with curved lines. It may be described another way. Suppose the first part of the curved line to be a thick stem

which is split at the junction of the two lines at A, DIAG. 48, and both halves bent slightly differently ; if the lines are tangential, both halves will be perfect lines without any break at the junction.

Radiation is a principle that also adds much to the grace of a design, and one that can often be made into a very pleasing element ; it is useful where neither parallelism on the one hand nor strongly contrasting features on the other are desirable. The diagrams given are probably sufficiently clear without further explanation.

Tangential Junction with a Straight Line at (A) & (B).



Tangential Junction with a Curved Line (A) & from a Point (B).

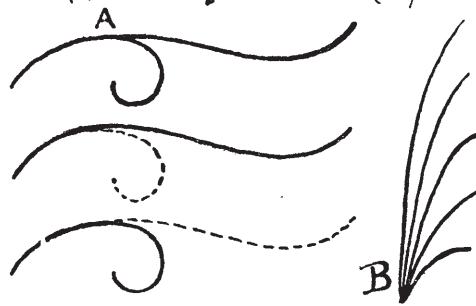


DIAGRAM 48.

ORNAMENTAL DESIGN

Growth is a principle derived from the observation of plant forms, as in the beautiful firm curves suggested by blades of grass, and particularly the stalks of plants having radical leaves growing direct from the root, such as hyacinths, daffodils, &c. When they are healthy they are full of the suggestion of strength, and the firm and almost straight stem of such plants as the fern and forget-me-not, with the opening leaves or flowers unrolling themselves in spiral form as in DIAGRAM 53, and also the spiral tendrils of climbing plants are suggestive of vigorous growth. It is advisable, when possible, never to violate the principles of growth; for instance, leaves and flowers should never be allowed to grow in both directions on the same stem, as in DIAGRAM 52. The qualification "when possible" has been

**Radiation
from a Point**



DIAGRAM 49.

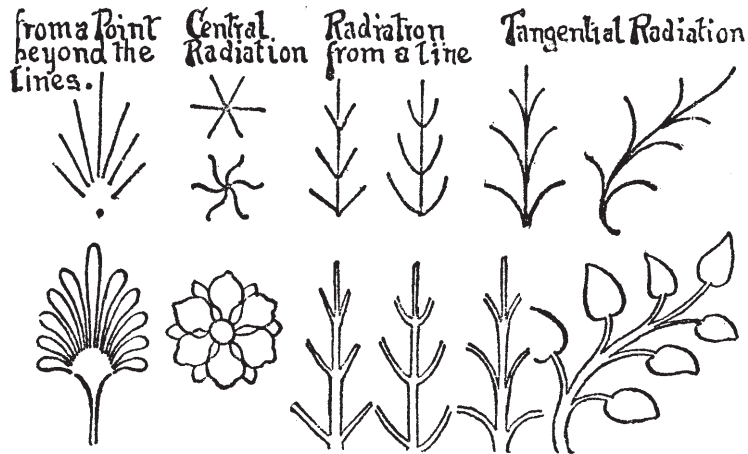


DIAGRAM 50.

put in because sometimes when designing a symmetrical all-over pattern of conventional ornament it is very dif-

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difficult to avoid some minor anachronisms, such as putting two stems to one flower, for the sake of joining the design up in the centre. It may be taken as a safe rule that the more naturalistic the design, the closer it should keep to the principles of growth. The lines illustrating growth, DIAGRAM 56, are derived from the lines of stalks, fruit, and seeds.

The principle of *stability* is illustrated by the strong leading lines of a design, and by the firmness of all lines suggestive of growth. Designs without good and firm leading lines appear limp and lifeless.

Subordination of one part of a design is essentially necessary to ward against monotony. In every good design there should always be some feature of more particular interest, such as a brightly coloured flower or group of flowers, leaves, or some other object of interest upon which the eye can rest, a something from which the design will take its character. The rest of the design must be subdued and act as a kind of background. This suppressing of one part for the enhancement of another is usually very difficult to students, especially beginners; they want to put all they know into every part. It is like a public speaker who begins his speech at the topmost pitch of his voice, and is consequently unable to rise to the occasion at the moments of highest excitement, or give that variety of modulation that is so pleasing in oratory.

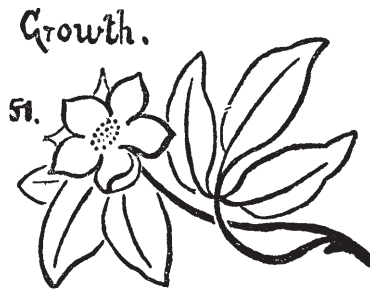


DIAGRAM 51.



DIAGRAM 52.

ORNAMENTAL DESIGN

To design well, the same as to speak well, there must always be an appearance of force in reserve. A comparison of DIAGRAM 42 and FIG. 3, PLATE XXXV., will show what is meant. The first is almost without subordination; in the second, the ribbon wave line is subdued in comparison with the floral one, and although without any particular subordinate parts, the first design is a useful one for certain purposes, and this brings us to the question of fitness.

DIAGRAMS 53, 54, AND 55.



DIAGRAM 56.

The principle of *fitness* demands an appropriateness between a design and the material to which it is applied; for instance, a design that would be suitable for a printed cotton would not do for a carpet, or a design for a velvet would be out of place and clumsy if produced in a fine silk. For some purposes, also, a design that is quiet and retiring in character is more in keeping than one containing strong contrasts and much elaborated details. Then again there is the question of suitability to the pre-

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vailing fashion, a subject that every designer is bound to study, even though he may at times rebel against it. This principle of fitness or suitability is a very important one, and before a design is begun it is necessary to think first for what purpose it is intended, and in what material it is going to be carried out.

The principle of *proportion*, while being of great importance, is one for which it is difficult to make an illustration that will serve for that purpose alone; every good design is an example embodying the principle. It enters, first, when deciding the proportion between the length and breadth of a design; it may appear too wide or too long for the purpose it is intended for, or for the character of the ornament. Then there is the proportion of scale between the ornament and the size of the repeat, and the proportion of one part of the detail with the others, all of which must be carefully balanced to make the design in perfect harmony.

The last principle, *unity*, sums up the whole of the others. To make a well-balanced design we must have a combination of many principles, but the taste of the designer must at all times exercise a controlling influence. There must be some association of ideas between the different parts and the whole, contrasts must not be too violent, variety must not run riot, symmetry must not be too stiff or rigid, there should be a gradation between the proportions of the details, and every principle must be used in moderation to produce a united whole.

ORNAMENTAL DESIGN

CHAPTER X

WHY NATURE SHOULD BE CONVENTIONALISED

BROADLY speaking all art, whether pictorial or decorative, is in a greater or less degree a convention ; otherwise, if it were not a convention it would cease to be art. The art of representing or imitating objects (like flowers and leaves, having rounded forms, which grow on different stalks at varying distances from one another) on a flat surface, such as for example drawing-paper, is necessarily restricted by a number of conventions. It cannot be an actual imitation, if it were we should expect to be able to take hold of the flowers and leaves and handle them ; but by certain methods which become conventions (that is, putting so much paint of the right colour in the right place), a flat version of rounded objects can be given that we accept as an imitation or interpretation of them. This is known as pictorial art, and although in some cases the imitation of nature is intended to be as close as possible, yet, as has been shown, it is in some degree conventional. This being the case, then, in regard to pictures, how much more forcibly will it apply to the art of woven design, where, if a natural object such as a flower is imitated, it must be done by means of interlacing threads on a flat surface, and by mechanical methods which necessitate

NATURE CONVENTIONALISED

a greater degree of conventionality. The nature and future uses of the fabric to be ornamented will also impose upon the designer conventionality in varying degree, and it will not be a question altogether of free choice as to whether the design should be very naturalistic or very conventional, but the character of the material designed for will in many instances decide this for us.

To decorate a textile fabric with fitting ornament there are many things of importance to take into account. First there is the inherent nature of the fabric itself, in the way of its peculiarity of surface, which being very beautiful in texture, and having a lustre or some other quality that is essentially characteristic of it, must be taken into consideration. A plain fabric without any ornament, if good in colour, is pleasing to the eye, though with constant usage this fact is apt to be forgotten; but if compared to a piece of smooth paper the value of the textile surface will be easily seen by contrast. Again, a textile has seldom to be seen as a perfectly flat surface like a wall-paper, but usually hangs in folds, or is used to cover other objects which are rounded in form. Then there are different kinds of fabrics; some are made of fine material like silk; others of coarser materials, as wool and jute; some are woven with an open texture as in gauze cloths, and there is also the peculiar texture of the pile in velvets. Then one has to take into account, when designing for woven goods, the process of weaving, in which the frequent repetition of one repeat is a necessary result.

Such conditions as these are bound to produce conventionality in a design, and limit it in many ways that can only be found out by practice.

Again, a good design should always be influenced by the material used and the method of manufacture. In the case of a textile the design should appear to be woven into the fabric, and not have the effect of being added on to

ORNAMENTAL DESIGN

the surface, like a printed wall-paper, or sewn on like appliqué work. It must give evidence of being woven into the material.

Take an exaggerated example that will illustrate what is meant by weaving the design into the material, and also the futility of attempting to imitate natural forms in woven articles. Imagine a piece of basket-work woven with such coarse material as rushes. Suppose that by means of weaving together these coloured rushes an attempt is made to imitate a rose ; it is easy to see that by using such clumsy material what a hopeless failure the result would be. Similar failure is only a matter of degree even in the finest fabrics. Suppose again that a rose, or something in the nature of a rose, but larger, is painted on the basket-work. The imitation of the object might and probably would be more real than if it was woven into the material ; but would it be more appropriate ? The first would be unsatisfactory because it would be an attempt at the impossible ; the second, although it might come nearer the possible, would still be out of place because basket-work is not the proper material to paint upon.

The most appropriatè and in every way the most suitable method of decorating the basket-work would be to take together a certain number of strands of one colour and

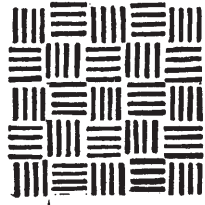


DIAGRAM 57.

weave them with a like number of another colour, and so produce simple geometrical designs such as the one given in the DIAGRAM 57. Again, by changing the combinations and varying the colours of the strands, a great variety of different designs could be produced. These designs would be legitimate, because they would be the natural outcome of weaving together such material, and they would be sufficiently pleasing because the plainness of the surface would be broken up quite enough by the geometric patterns.

NATURE CONVENTIONALISED

Nothing could be more vulgar than the attempts one sometimes sees at imitating natural objects or flowers on woven fabrics ; the copying of natural flowers, &c., in their real colours, with all the effect of relief given by the truthful rendering of the shadows, may be clever as a triumph of mechanical skill, but it is not artistic, and is in every way unworthy of the designer. To attempt such a thing is worse than foolish, for besides being a vulgar degradation of the art of designing, it aims at the impossible and invites failure. The material at the designer's disposal is not a suitable one in which to imitate nature, and even if it were, the imitation would not be decoration in the true sense ; it would be more allied to pictorial art, and its standard would have to be taken as that of a picture. As a picture it would be ridiculously out of place on a useful material. Try to fancy a textile decorated with pictures many times repeated and then hung in folds, or cut into small pieces to fit as a furniture covering or dress fabric. No, you would at once say a picture should be hung on a wall where it can be advantageously seen ; and further, a picture does not gain any added value by being repeated any number of times, but becomes monotonous and uninteresting. However clever the woven imitation may be, it falls far short in excellence of a picture when painted on canvas or paper with the proper materials ; far better therefore is it for the imitation of nature to be left to the picture painter, and for the designer to be content with such an adaptation of nature as is consistent with the conditions of woven ornament.

Having tried to show the inappropriateness of using direct imitations of natural flowers, &c., in the decoration of textile fabrics, it will be desirable now to make clear what is the difference between nature and art. It may help to an understanding of this difference if we use a simple illustration such as is afforded by natural foliage with, on the one hand, all its wildness and luxuriant overgrowth as we find it

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in the country lanes and hedges, and contrast it, on the other hand, with a landscape garden. The beauty and character of the one are so different from that of the other that it is impossible to draw any satisfactory comparisons between the two for want of a common basis to judge them upon. They can each only be judged each from its own standpoint. We may be ever such lovers of nature, and may be able to enter into all its moods and changes, appreciate its grandeur, its wild overgrowth and abundance, and its intricacies of detail, and yet be at liberty to admire the more formal combinations of nature's flowers and foliage reduced to order as we find them in our parks and gardens.

There is a wide difference between the way nature grows her flowers and the way the gardener arranges his. In nature the rose, the hawthorn, the blackberry, or the bluebell, the primrose, the anemone, &c., grow chaotically together, and what we admire as beautiful in nature is this wild and uneven distribution of her wealth of flowers and foliage. The gardener proceeds on an entirely opposite plan. He spaces out his ground into geometrically shaped beds, and arranges the different flowers in formal order, each separate kind being placed according to a definite ornamental plan, and avoiding the chaos and confusion which are so pleasingly characteristic of nature.

Nature's method and the gardener's method are so different that the question suggests itself, which is right? Nature of course must be right, because all our ideas are founded upon and derived from it; and in its own way the landscape gardener's arrangement of nature may be considered right when its standard is taken from the ornamentist's point of view. The first is the result of nature's overcrowding abundance, where each plant has to struggle for its existence; the second is the outcome of man's mind, which proceeds in an orderly and logical method. One is

NATURE CONVENTIONALISED

nature, the other is art, the latter being the adaptation of nature to the necessary conditions imposed.

The art of designing has a similar relation to nature as the gardener's art. The gardener makes use of the materials that nature provides, and by a process of selection arranges them after a plan of his own. So it is in the case of the designer, he should choose from nature's storehouse only those parts that will be of service to him, and reject the others.

As was stated at the beginning of the chapter, all art is a convention in its very existence, and the art of ornamentation is the most conventional of all forms of art. To ornament a piece of cloth demands a conventional treatment, because the necessities of weaving require that the design shall be indefinitely repeated ; this fact alone contravenes any notion of a design being a mere arrangement of naturalistic forms, and that being the case, the question then arises how much must a design be copied from nature, and to what extent should it be only an abstraction.

In the first place, a designer must bear in mind that he has a certain amount of material to decorate : he is not making a design in the sense that an artist makes a picture. The picture is painted as a work of art to stand alone, but a design is made to decorate the cloth, and must therefore be subservient to the purpose that the cloth has to serve. The cloth may be decorated with anything that is suitable, whether based on nature or not, and it must be borne in mind that, artistically speaking, there is no necessity for using natural forms ; purely abstract ones, that is, forms that are neither copied nor adapted from nature, can be used with equal advantage, provided these forms are beautiful ; but if natural forms are used, the question of how far it is desirable to follow nature, and with what degree of realism, must be carefully considered : the chief service nature does to the art of designing is in suggesting

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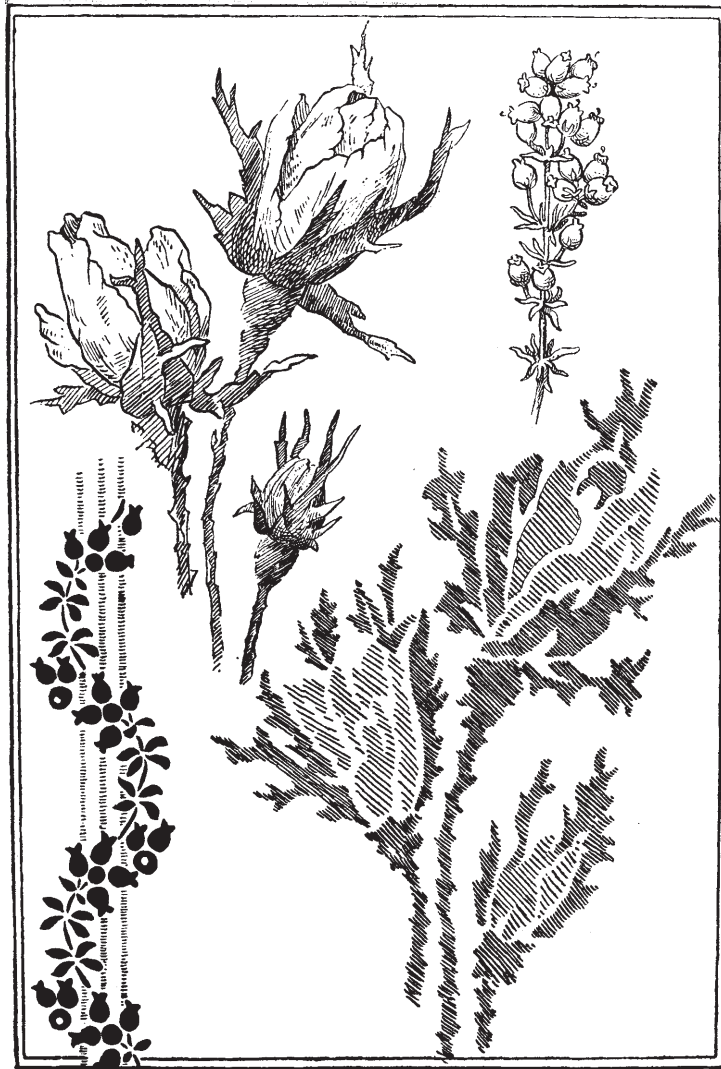
the many beautiful shapes and ornamental arrangements in which nature is so prolific.

There is of course an advantage gained by using natural forms, such as the rose or the peony, but it is rather one of association than artistic necessity. One has become so accustomed to admiring flowers, that one is pleased to see and recognise them when applied to a design ; but still this is only sentiment, for, artistically speaking, any other forms that are as beautiful would do quite as well.

Then it reduces itself down to this, that we should use the forms of nature just as far as they will serve the purposes of our design, and use them only in such a way that they will fall into the graceful lines and shapes which we require for the particular piece of work in hand. What the designer must seek for is beauty of form and grace of line ; these he may evolve from his own sense of the beautiful without reference to nature, or he may abstract them from any suggestions which natural forms offer.

If the designer's ideas are taken from nature, a plant for instance, he should first study the plant until he has made all its forms his own, and he should make himself so far master of it that he has no further need for the actual flower ; if he has done this he should be able, with the knowledge he has gained of the flower and its details, to evolve a design of his own, based on the plant, making nature fit itself to his ideas, allowing every petal, sepal, leaf or stem to fall into good decorative lines, and idealising the essential beauties of the flower while rejecting non-essential and unimportant accidents.

The designer's duty as regards nature is one of abstracting or eliminating ; parts that are unnecessary to the design should be left out, those that will add to the beauty of it and will properly serve the required purpose must be retained. If a type is used, such as a rose, he cannot leave out parts that are characteristic of the rose ; if he departs so far



MOSS-ROSE AND HEATHER WITH ADAPTATIONS.

NATURE CONVENTIONALISED

from it, it is obvious that it would be better not to use the rose at all, but to invent something of his own.

Having discussed these questions of conventionality and abstraction, a few practical illustrations may help to make the points clearer. PLATE XXXVI. contains a sketch of two half-open roses and a bud, drawn from nature. The petals form comparatively smooth surfaces, with smooth edges. The outlines of the sepals are broken into sharp-pointed divisions, and the surface has spiky thorns from the central veins; the stems are also thorny. These spiky sepals and stems suggest a useful contrast to the smoother petals, and this contrast is shown in the adaptation of the same flower for a simple textile design. It is distinctly an adaptation or an abstraction. There is no attempt to rival nature in realism of effect; realism is avoided, and is substituted by simplicity and flatness. Certain facts in nature are made use of in the ornamental treatment; the petals are made lighter in colour than the sepals and stalks, the petals in nature being smooth, and the sepals and stalks comparatively rough and thorny, and this contrast, in so far as it is possible on a flat surface, without light and shade, is suggested in the ornamental arrangement. The whole adaptation has a peculiar broken effect that might be useful in some designs and is quite characteristic of the natural flower.

There is also a drawing of a sprig of heather on the same plate, and below is a little stripe design based on it. The sprigs are made to twist round in a wave line form, the flowers and leaves being in solid colour, and to avoid too much continuity of the stem, the leaves are not quite joined to it. The arrangement of leaves and flowers, although near enough to nature to be recognisable, is not a copy from the natural type, but is arranged to suit the design.

PLATE XXXVII., FIG. 1, is an adaptation of another type of rose, with leaves. The treatment in this case is quite different from the last, and is suitable for a design of a

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bolder and more marked character. Although the design is entirely in flat tints, a certain amount of relief is hinted at in the drawing of the centre petals and the turned-over parts of the leaves, though there is nothing that suggests realism. Alongside is a drawing of a rose-leaf with another variety of treatment.

Below are two different renderings of a peony, one with a simple flat tint, the other with two tints and black lines. The drawing of the inner series of petals in this latter case is very suggestive of the way in which in nature they appear to turn over towards the centre, though it is by no means naturalistic. A certain license is taken in putting regular serrations on the petals. One half of each leaf is made darker, almost as if it were in shadow, and on the tip of the shadow is the white turn-over piece. This is done to break up the surface and give the design a lighter appearance.

PLATE XXXVIII. has several conventional renderings of animate forms. The butterfly, FIG. 1, is arranged as a symmetrical design to fill a circle for a spot figure. FIG. 2 is a prawn by a Japanese designer. FIG. 3 is a lion from a woven coat-of-arms. The last, FIG. 4, is a drawing, also of Japanese origin, of a bird with acorn branch in its mouth; behind it are conventional Japanese clouds.

PLATE XXXVII.



ADAPTATIONS OF THE ROSE AND PEONY.



ADAPTATIONS FROM ANIMATE FORMS.

CHAPTER XI

STRUCTURE OF ORNAMENTAL FLOWERS AND FOLIAGE

THIS grouping together of ornamental flowers and foliage includes both natural plants treated ornamentally, and also conventional or abstract foliated forms, and it is intended to show how they must both be governed by certain principles of ornamental construction. It has been shown in a previous chapter why nature should be conventionalised ; it is proposed now to explain how the principles of ornament should be applied in the construction of ornamental details, whether from nature or of a purely abstract character such as the invented forms in traditional ornament. It is important to state here that the principles are not necessarily derived from nature, but they are, more properly speaking, the outcome of a feeling for what is right in ornament in the desire to produce orderliness and rhythm.

The diagrams given in this chapter are not intended to represent natural leaves, but are given as types that may be found in nature, or of leaves and flowers that are used in conventional ornament ; and turning to PLATE XXXIX., a series of leaf forms will be found that may be divided into three classes, namely, simple, divided, and compound.

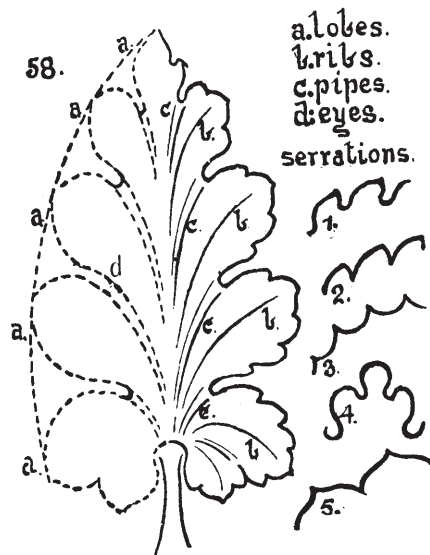
The first series, 1 to 8, are simple leaves all of different

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shapes. FIG. 1 is like a grass blade, the two sides are almost parallel. FIG. 2 is the shape of a spear head. FIG. 3 is like a spear head, with the widest part of the blade at the top. FIG. 4, the widest part is at the middle. FIG. 5 is wider at the base and broader than FIG. 2. FIG. 6 is still wider, and turned up like a heart-shape at the base. FIG. 7 is a sagittate leaf, the side of which is a compound curve, and the base of the leaf projects out into two points. FIG. 8 is a further variety, being composed of two compound curves, which eventually glide into the stem.

FIGS. 9, 10, 11, 14, 15, 19, and 21 are divided leaves. FIGS. 12, 13, 16, 17, 18, and 20 are compound leaves. In the divided leaves the divisions do not go through as far as the central rib or stem; but in the compound leaves each division is a separate leaflet having a short stem, which joins to the central one.

The method upon which a divided leaf should be constructed is given in the



constructed is given in the accompanying diagram.

The names of the different parts are given along with the drawing, and are marked A, B, C, D. The first part to be decided upon is the general shape of the leaf; this shape is drawn in dotted lines on the left-hand side. The leaf is then divided into lobes as at A, and in drawing the lobes great care must be taken to properly con-

struct the parts where they join at the eyes. If the

PLATE XXXIX.



STRUCTURE OF ORNAMENTAL LEAF FORMS.

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drawing of these lobes be looked at carefully in the diagram, it will be noticed that they are so drawn that if they were produced they would be continuous with the pipes, and therefore tangential to the central upright rib; this is a point in the construction upon which great stress must be laid, because it ensures a firmness in the appearance of the leaf that cannot otherwise be obtained. Afterwards the veins must be drawn from the tip of each lobe and tangentially to the central rib. The pipes, when they are used, should also be drawn tangentially to the central rib, and should be, as stated in the description of the lobe, in a line continuous with the general outline of the lobe. Lastly, the serrations or rafflings should be drawn. Accompanying the same diagram are given illustrations of five different varieties of serrations; number 1 belongs to the class of leaves like the bramble; 2 is somewhat similar, but composed of simple curves; 3 is concave in shape, and reminds one of the holly and thistle leaves; 4 is rounded in the style of the oak leaf; and 5 is a double curve like the geranium. Examples of these serrations are given on PLATE XXXIX., and taking them in the same order, number 15 is like number 1, 9 like 2, 10 like 3, 19 like 4, and 11 like 5; number 14 is after the fashion of the dandelion, and is the same serration as FIG. 9, but the point of each lobe is turned downwards. In conventional or abstract ornament any of these serrations can be used that are the most suitable for the purpose in hand, and in naturalistic ornament the serrations will of course be suggested by the plant that may be chosen. FIGS. 9, 10, 11, 15, and 19 are examples showing different ways of arranging the veins of the leaves; in number 9 they are tangential to the central rib, in number 10 they diverge from the central rib at an angle, in number 11 the ribs radiate tangentially, and at 15 they radiate at different angles from a point.

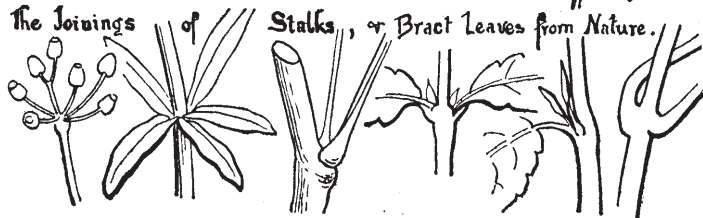
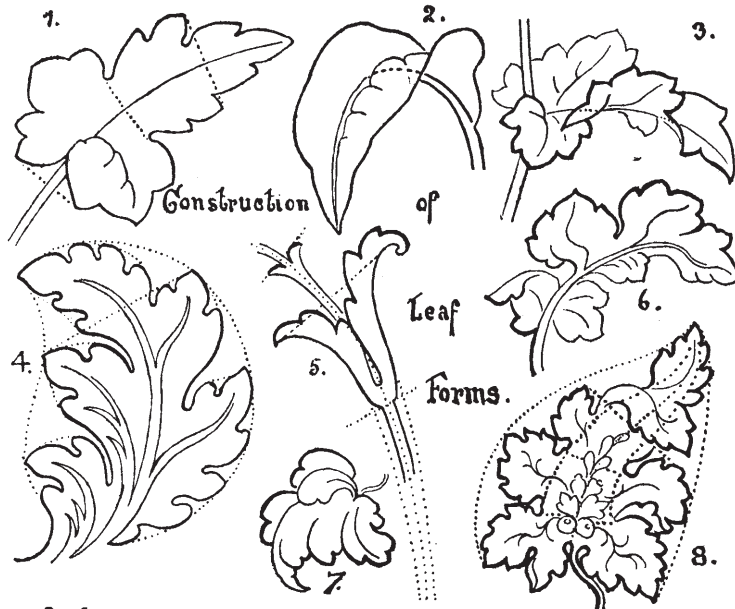
On the same plate there are several examples of com-

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pound leaves, as in FIGS. 12, 13, 16, 17, 18, and 20. Compound leaves are subdivided into leaflets or divisions, which extend down as far as the central rib. Each leaflet may have a short stalk of its own which joins it to the central rib. Like the divided leaf, they should all be constructed on some definite plan—for instance, in FIG. 12 the divisions are arranged in a diminishing order, beginning with the smallest at the bottom and the largest at the top; and also, as will be seen by observing the construction on the right-hand side, there is a certain radiation of the lines of the divisions, the bottom ones being the most horizontal, and the others gradually sloping more and more in an upward direction as they get nearer to the top of the leaf; the same applies to the construction of most of the other compound leaves. FIG. 20 is a compound leaf in which the divisions are in sets of three; on the right-hand side of the leaf is a diagram of construction. There are three subdivisions, a central and two side ones; the two side leaflets are joined by straight lines, one at the top and the other at the base of the leaflets, and they are so arranged that the two lines will cut the central rib of the group at right angles. The rest of the construction is sufficiently evident from the diagram.

In illustrating the principles of construction we have supposed the foliated forms, which are given as examples, to be flattened out and pressed into absolutely symmetrical shapes; and although such a severe treatment may be useful in making it easier to explain the principles underlying the construction of foliated forms, it must not be assumed that in ornament it is advantageous to have two sides of a leaf absolutely symmetrical: it is rather the reverse, such a treatment being only useful where severity of form is desired.

In nature, two sides of a leaf are never the same; nature prefers balance to symmetry. If we take a simple rhododendron leaf, such as DIAGRAM 59, and look at it from a front



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view, we shall find that there is a slight difference between one side and the other. But further than this we seldom find in nature that a leaf is even straight; usually it is curved over from the base to the point, or it may have a twist on its central rib, as is shown in the accompanying DIAGRAM 60. A knowledge of the construction of leaves, as illustrated by these symmetrical diagrams on PLATE XXXIX., is necessary in drawing them when in the simplest positions; but it is even more necessary when they are drawn in foreshortened or twisted positions, and it is important that when a leaf is represented under the latter conditions it should be consistent with the actual shape as it would be seen if flattened out; there is often a temptation to draw a foreshortened leaf in a design without a thought as to its actual shape if it were pressed out.



These symmetrical leaves have been used because it is easier by means of them to make clear the principles of construction; but they are more a means to an end than the end itself; it remains now to apply these principles to leaves foreshortened in various positions; the principles are the same as in the symmetrical leaves, though the application varies with every different case; on PLATE XL. are several examples of such leaves.

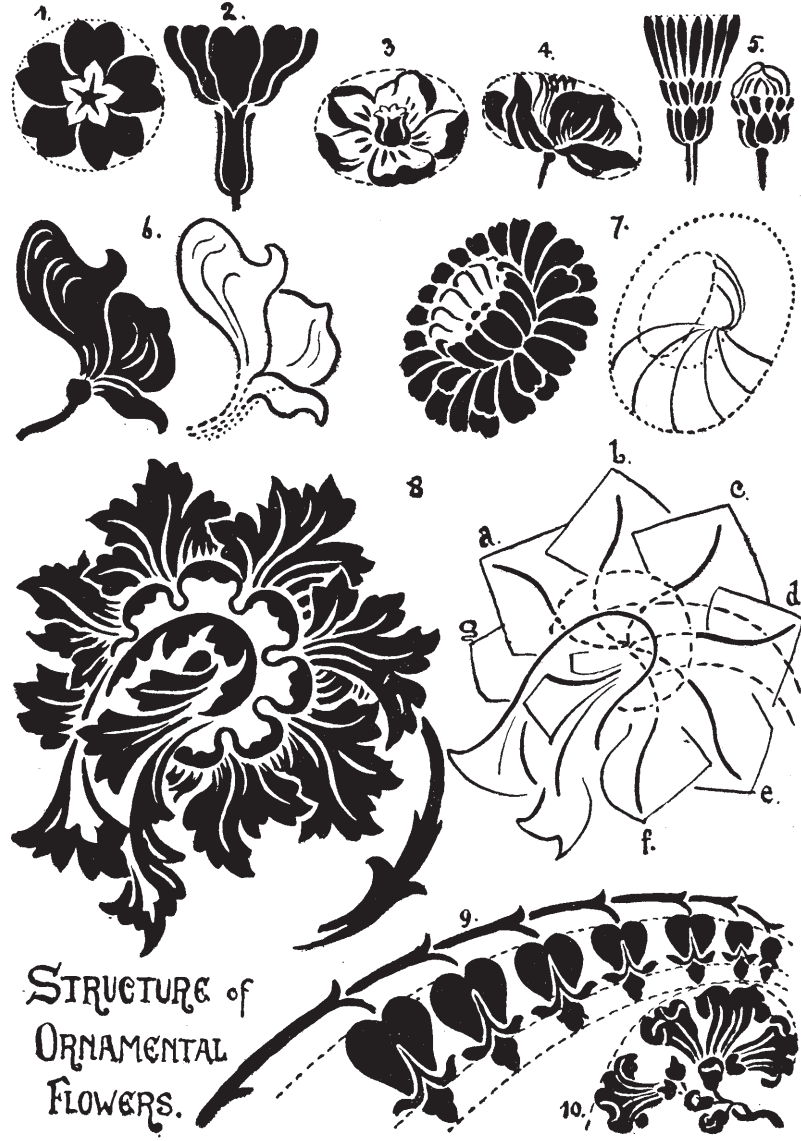
In drawing a twisted or foreshortened leaf the central rib must be arranged in such a way that it will not suggest being broken or disjointed, but must be drawn with a firm line from point to base as in FIG. 1; in this case it is very simple, but in FIG. 2 it is not quite so simple. In this figure the part of the rib which goes out of sight under a portion of the leaf is represented by dotted lines, and although this part does not show, yet the two parts that do show are so drawn as to be evidently parts of the same rib.

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In FIG. 3 the stem is also in three parts, but suggests possible continuity in one firm curve.

The structure of the leaves and the division of lobes are on the same principles as those of the symmetrical leaves on the previous Plate, only in this case the divisions are balanced rather than made absolutely equal, as may be seen in FIGS. 4, 5, 6, 7, and 8. In FIG. 1 a construction is given that is useful in suggesting a principle of proportioning the lobes; the bottom pair of lobes are the larger, and the two upper pairs graduate smaller, being arranged rectangularly with the central rib, as shown by the dotted lines which join the corresponding parts of the lobes and cut the central rib at right angles. This arrangement is necessary when the leaf is curved on the rib, because the lobes on the top side of the rib will become larger, or, the eyes must be made wider, than those on the bottom side, and by placing them as they are placed in FIG. 1 regularity is made certain of. FIG. 4 is an example of a leaf that is even more irregular and partly deviates from this principle of construction, though it acknowledges it in the pair of lobes nearest the top. FIG. 8 is a more complicated leaf, but one that is planned very decidedly on the rectangular principle; the dotted lines that join each pair of eyes are all at right angles to the central rib. The eyes are also on lines that converge to the top point of the leaf, as is shown in the figure by dotted lines.

The remaining figures on PLATE XL. illustrate some different joinings of stalks drawn from nature, and also the small bract leaves that so often grow at the junction of a branch stalk with the main stem. In designing, this part of the construction is often made a great deal of, and much ingenuity may be displayed in varying it. A design is apt to appear stalky if too many simple joints are shown, but by careful management these joints can be made an interesting feature of the design. In FIG. 1 the bract leaf is turned up



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and made almost cup-shaped. FIG. 2 has sheath leaves that wrap round the stem instead of bracts. FIG. 3, the stalk is quite detached from the bract. In FIG. 4 the bract is exaggerated to a leaf that is gaily flowing in the wind like a flag of foliated ribbons.

PLATE XLI. has a number of examples illustrating the structure of ornamental flowers ; some of them are naturalistic, and others are conventional. Flowers, like all other ornamental forms, should be contained within the bounds of good shapes, otherwise they are apt to appear sprawling and irregular, though this does not mean that they should be enclosed within geometrical shapes. FIG. 1 is a full view of a small flower of regular shape, therefore it is best contained within a circle. FIG. 2 is a side view of the same. FIG. 3 is an irregularly formed flower, and in spite of its irregularity it comes well within the elliptical shape that encloses it. FIG. 4 is a side view of a similar flower which comes within a curved shape that is partly elliptical. FIG. 5, the sepals and petals are in regular tiers. FIG. 6, which is drawn from the flower of the monkshood, is made up of a number of very graceful curves ; the grace of these curves is due partly to the variety of form, and also to a great extent to the fact that they all radiate from the stem, as shown in the dotted lines of the diagram at the side. In FIG. 7 the petals radiate in curved lines from the centre of the flower ; the method of radiation is also shown by a diagram. FIG. 8 is a much more elaborate flower than any of the preceding ones ; the sepals and the central tube-like portion are composed of a kind of acanthus-leaf ornament having serrated edges, these two parts being divided from one another by a smooth-edged corolla ; the smooth edges and the white inside portion give a useful contrast to the outer and inner serrated parts. Alongside this figure is a diagrammatical analysis of the same showing the principles of construction. The whole figure comes within a more or

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less regular shape; the points of the sepals come opposite one another—A is opposite E, B is opposite D, F is opposite G, and C forms a central one. The central rib of each leaf, if continued, as shown by dotted lines, would radiate from one point at the centre of the flower. The tube takes a direction at right angles to the longer axis of the flower, and the two sides of it, if produced, as shown in dotted lines, would converge with the line of the flower stalk. FIG. 9 has a number of flowers on one stem, and as all the flowers diminish towards the end in a regular proportion, all the parts should diminish at the same rate; this is best secured by drawing curved lines, as shown, which converge towards one another. FIG. 10 has four more irregularly shaped flowers which radiate, though somewhat unevenly, from a central point; the flowers are contained within a well-formed curve.

These drawings and diagrams have not been given under the supposition that they illustrate the whole art of constructing foliated forms, they are given rather as suggestions that may point students in the right direction; they can only be used as such, and if used further they will lead astray in the way of stiffness and awkwardness. Every separate piece of ornament has to be studied on its own merits, and every rule has to be modified through the artistic feelings of the designer. This same thought has been well summed up by a writer on ornament in the sentence, "Rules are good things to depart from," and that is about how the case stands; a design that is all rules ceases to be an art production, it becomes more akin to a scientific diagram. Rules are useful in indicating what mistakes to avoid, but they become an abuse if they are too evident in a design.

CHAPTER XII

THE TREATMENT OF PLANT FORMS IN TEXTILE DESIGN

THE most casual glance at nearly all figured fabrics of the present time will show the influence which plant forms exercise in the production of design, and as the average taste of to-day runs in the direction of naturalistic rather than abstract ornament, there is very little excuse for plant life being overlooked by the designer. There is a danger, however, that plant forms may be used unsuitably, and, though the preference for natural forms shows a healthy condition of things so long as it is kept within reasonable bounds, it must always be remembered that they need to be modified to meet the requirements of ornament and repeated pattern, and to be made subservient to the limitations of the weaving process.

The popularity of naturalistic ornament and the reason why it is so generally appreciated is often on account of its association with some plant or other object in nature which is familiar, and which can be easily recognised, and not always from any beauty that it possesses as ornament. This surely must be the reason why such a remunerative market exists for those fabrics—and they are not inconsiderable in number—which are resplendent in designs that are hideously natural. They certainly possess little artistic value, being

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void of all sense of fitness and beauty of form or colour ; presumably therefore the commercial success which they command is due to the fact that their naturalism appeals with strong force to those whose knowledge of the rights and wrongs of ornament is unfortunately very limited.

For textile fabrics *naturalism* must always be made an entirely secondary matter, and must on no account be allowed to usurp the place which belongs to such decorative qualities as graceful arrangement and distribution of form and harmonious combination of lines and colours. Plant forms are not so much ready-made ornament that can be used without any modification on the part of the designer ; they provide material from which can be evolved fresh ideas and new shapes for ornamental purposes, but they must be idealised and not imitated, for however rich in beauty nature may be, it is not in itself ornament. For woven fabrics, in which constant repetition of pattern is an essential condition, it is far safer to err on the side of conventionality than of naturalism, and in using plants as the motive of design we must aim at abstracting their more essential beauties and casting aside the accidents and non-essentials.

In advocating design based on plant forms, reference may be profitably made to the authority for their use which the historic aspect of textile ornament provides for us. Their value seems to have been recognised almost simultaneously with the beginnings of ornament, and they have been used for the purposes of design from the earliest periods of art history down to the present day. Old Egyptian fabrics show unmistakable influence of the use of plant forms, so also in Classic art, the lotus in the former and the ivy in the latter being perhaps the most common. In early Christian and Byzantine art the vine plant is very extensively met with, this being, no doubt, partly on account of its symbolic meaning, though at the same time it lends

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itself very readily to ornamental treatment, and it is not to be wondered at that its use continued during the period of the Renaissance when symbolic meaning was subordinated to æsthetic effect. In Gothic art the vine was also much used, and other plants which have been made great use of in various historic styles are the olive, pomegranate, oak, the lily, rose, and the acanthus, the latter being the forerunner of the various types of conventional foliage which are embraced by the comprehensive though somewhat vague term "acanthus-leaf ornament."

In Oriental art—including Chinese, Japanese, Indian, and Persian—such flowers as the iris, peony, poppy, rose, and almond blossom are among those most commonly met with.

In more recent times the number of plants adapted for design has not been so limited, the range of selection having been very much extended; they present an infinite variety of form, colour, and arrangement, every plant which one comes across offering its own suggestions for ornamental use. Of course some are more prolific in ideas than others, though there is hardly a plant, however unpretentious, which may not be profitably used in the production of ornament for woven fabrics. The plants mentioned as being the principal sources of floral design in the various periods of history are doubtless still among the most valuable, but there is no necessity for always ringing the changes on them; with the great and ever-widening field of the vegetable kingdom to help ourselves to, there is absolutely no occasion to go on repeating the old and well-worn forms (beautiful and worthy of our admiration even though so many of them are) which have been used by other countries and at other periods of history.

The mere exercise of studying natural plant forms is in itself a pleasant and profitable one apart from any use to which such study may be put in design, and the most

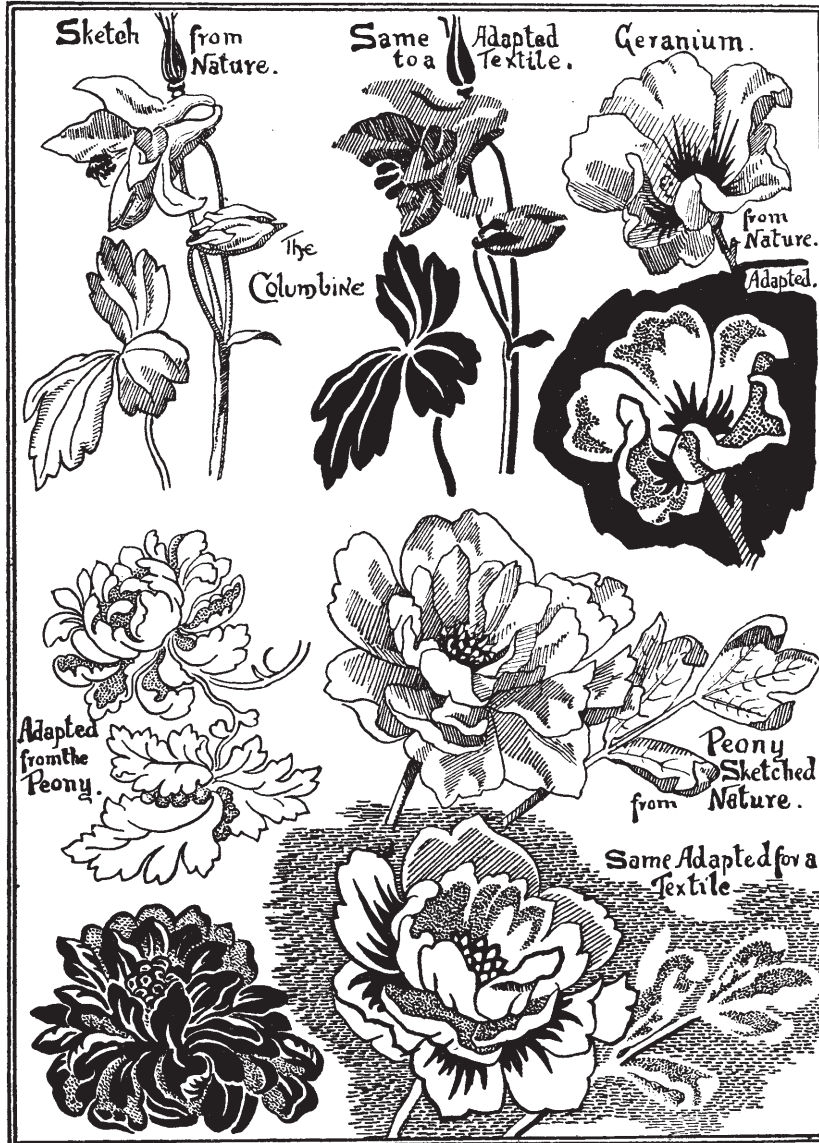
ORNAMENTAL DESIGN

pleasant and profitable way of doing this is to draw them from nature as much as possible; it is the *only* way of extracting whatever value for ornamental uses they may possess, being much more to the purpose of the ornamentist than the analytical one which the botanist adopts. The designer looks for such artistic qualities as beauty of growth and arrangement, and for any peculiarities or characteristic details which will lend themselves to good ornamental treatment.

It is always desirable when converting the natural plant into the ornamental pattern to retain as much as possible of its character and peculiarities of growth and structure. This is a comparatively easy matter where ornament is not under the necessity of being constantly repeated; in a woven fabric, however, the repeat of the pattern tends to make this more difficult, though much may be retained if we take care that, where a plant form is chosen, it may be chosen with a view to the position and purpose of the particular fabric for which a design is being made. In dress fabrics, for instance, one would naturally choose plants that are light and delicate in character, such as the rose and carnation, while for heavier fabrics, such as curtains and hangings, plants like the peony and the large poppy would be more appropriate for the bolder designs that these fabrics require.

The size of the plant in nature must be taken into consideration, and as a general rule the ornamental treatment should not be far removed from the original, particularly so where the design is naturalistic; where the ornament is very conventional there is no necessity to keep closely to the size of nature, and if any gain is effected in the design of the fabric by a change of scale there is no reason why the change should not be made.

Another feature which must guide the designer in using floral forms is the particular kind of skeleton which he may



NATURAL FORMS WITH CONVENTIONAL TREATMENT.

PLANT FORMS IN TEXTILE DESIGN

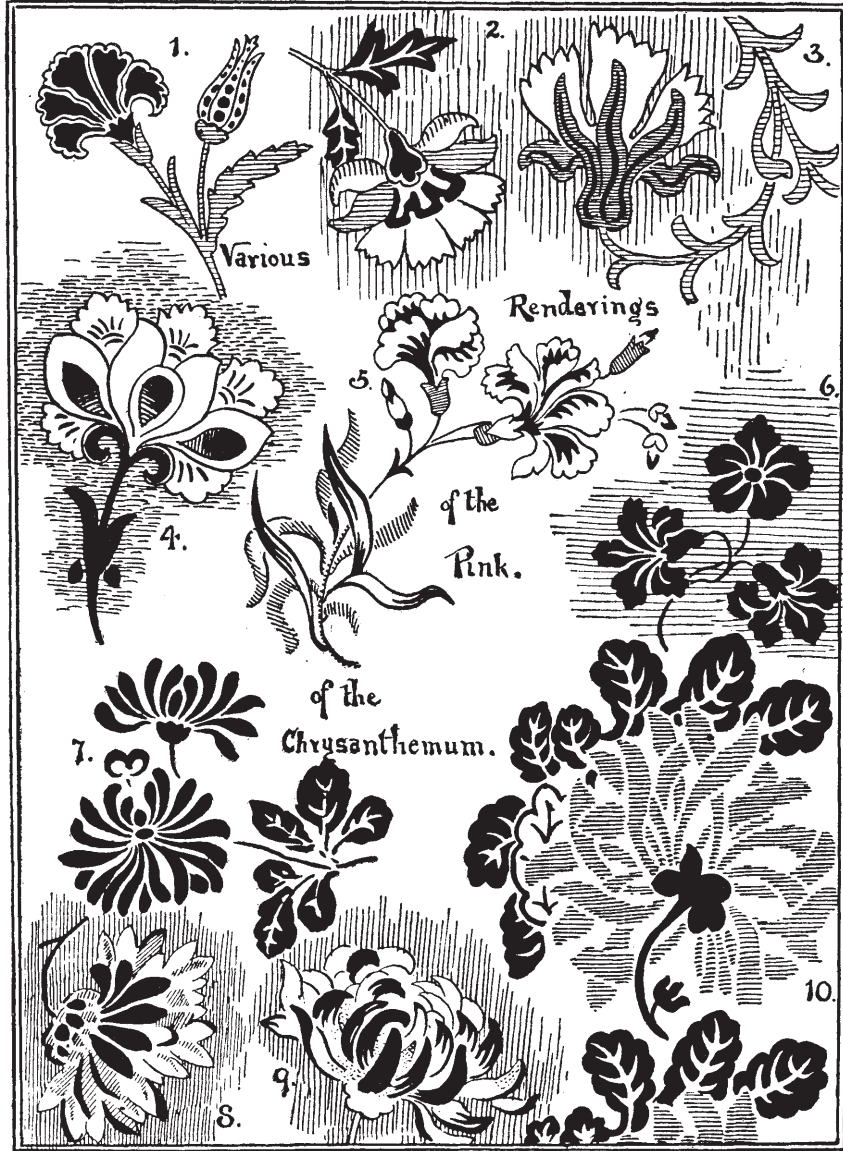
adopt. By the term "skeleton" is meant the structural or main lines which form the backbone of the pattern, and from which the various details of the ornament grow. It may be free and naturalistic in character, or it may be severe and conventional; but according to the skeleton adopted, so must the character of the details growing from the skeleton be regulated. For instance, a geometric skeleton demands ornament of a very conventional and geometric character, and any less formal arrangement of lines involves a correspondingly less formal kind of floral treatment. In the same way a free and naturalistic arrangement of stem lines requires a corresponding treatment in the details, and it would be manifestly absurd to place a geometrical rosette on a naturalistic stem, for the stem and its added growth would not be consistent with each other.

It now remains to be seen how natural plant forms may be treated so as to retain as much of the beauty of nature as possible when combined with the idealised renderings which the designer has to resort to. As has been already explained, nature must be conventionalised when applied to the decoration of woven fabrics; no attempt must be made to imitate nature; the plant form which is being used must be regarded as suggesting ornament, and not as something to be copied as closely as possible. For example, in PLATE XLII. we have an instance of a peony sketched from nature, together with an ornamental treatment of the same flower; the latter follows the former very closely, but at the same time there is a decided difference in the effect of the two. One has all the accidental irregularities of nature, the other is simplified and idealised. It is brought out in black, white, and two tones of gray. Each of these is made a definite shape, and as much beauty of form and expression is given to these various parts as is possible. The black vein lines are made to express the direction

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and form of the various petals to which they are applied, and the half-tone in the cup of the flower is shaped so as to indicate the form of that part with clearness. The centre portion of the flower is also reduced to order and ornament. The other drawings adapted from the peony, on the left of the plate, are much more conventional, and depart more from the natural type; in these we see the various petals converted into good and graceful shapes, the various forms radiating together to the centre of the flower as in nature, but with an ornamental effect which has been added by the designer. On the same plate (the upper portion) is given a sketch from nature of a geranium, together with an adapted treatment for a textile fabric in three tones or colours, represented by black, white, and grey, and there is a similar comparison afforded as in the peony: flat tints take the place of gradations, and these flat tints are made (as in the grey parts) as expressive and ornamental in shape as possible. Another flower, the columbine, is also shown sketched from nature, with the same adapted to a textile; in this case the leaf is brought out in solid black with white veins, the veins suggesting, by their shape, the direction of the separate leaflets.

On PLATE XLIII. are various renderings of the pink and the chrysanthemum. FIGURE 1 gives a very flat conventional treatment, the petals of the flower being solid black with a black outline. This addition of an outline is a common device and gives softness to solid masses; there is of course no outline in nature to warrant this, but so long as the ornamental effect is better, it does not matter if nature be somewhat departed from. Similarly in the bud, the addition of spots gives useful contrast, and even though there may be nothing in nature to suggest such spots, one is perfectly justified in adding them if the design gains thereby. Nature may be made use of as much as we wish in suggesting ideas, but, after all, the designer must seek



PLANT FORMS IN TEXTILE DESIGN

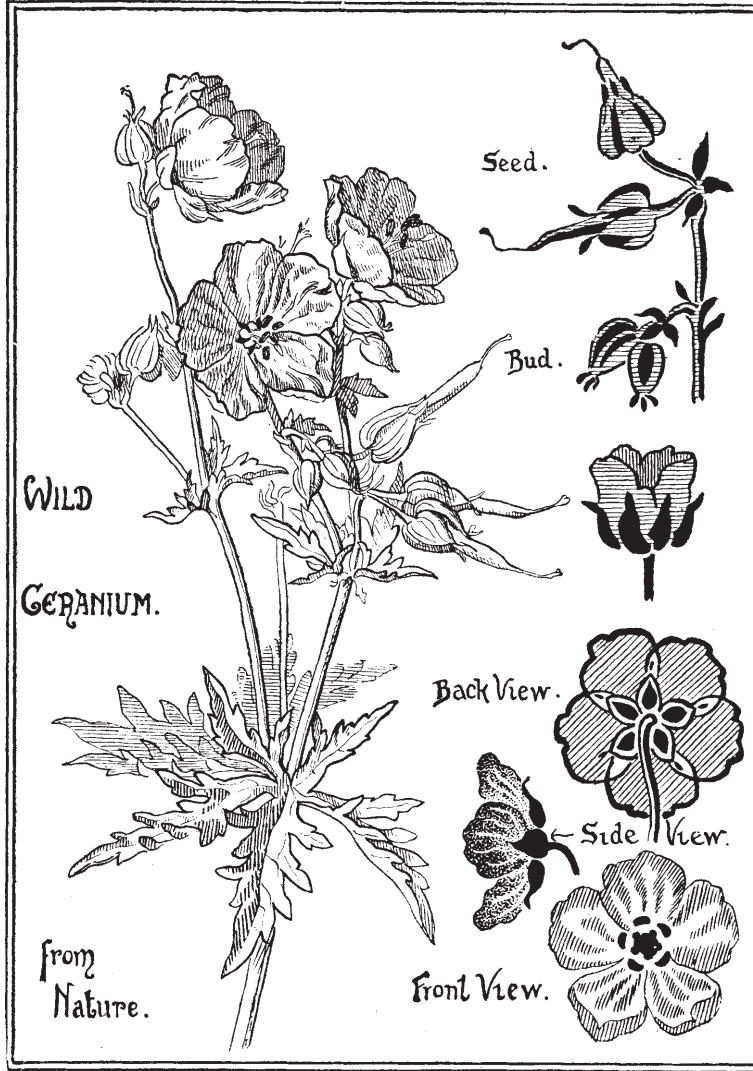
first of all a good ornamental result ; this is of primary importance, and must not be allowed to suffer for the sake of keeping closely to the botanical accuracy of detail in the plant which he may be using. FIGURES 2 and 3 give other renderings of the pink, the latter being a heavier type of treatment and suitable for a coarser material. FIGURE 5 is the reverse of the latter, and is from a silk fabric. In this case the design approaches more closely to nature, though still an idealised rendering and not an imitation ; the flowers, for instance, are entirely suggested by black and white, and their graceful character is due solely to the form given to the outline and solid parts of the various petals. In FIG. 6 also, the flowers are dependent entirely for their effect upon the radiation of the petals and veins from the calyx tube : there is no light and shade or colour to help ; it is entirely a question of good design and the production of good silhouette forms. This same silhouette effect is seen in FIG. 7, the chrysanthemum. Such treatments as these are the most simple, and are specially suitable for damasks in effect, but they require a good feeling for beauty of form, as they have nothing else but this on which to depend. FIGURES 8 and 9 are other treatments of the chrysanthemum, the former being brought out in black, white, and grey ; use is here made of contrast, the petals in the near half of the flower being made black against the grey and white of the further parts. In FIG. 9 individuality is given to the flower by the curve of the petals as well as by the contrast of tone. In FIG. 10, which is taken from a Japanese fabric, strong character is given by the dark leaves—with their angular vein markings—being brought against the lighter tone and the soft graceful shape of the flower. The petals of the latter are arranged so as to suggest the interlacing confusion which is so frequently seen in this flower, and all the petals are made to assume good shapes as they radiate from the centre of the calyx.

ORNAMENTAL DESIGN

In FIG. 9, part of the quality is due to the shaded effect. As a rule, however, it is advisable to be very chary of introducing gradations of colour for the purpose of suggesting light and shade. It is quite possible to produce these shaded effects in weaving, and so long as the object of them is simply to give added value to form and not to produce an appearance of relief to the ornament—that is, to make it appear to stand away from the surface of the cloth—there is no objection to them. In textile fabrics, the ornament must be always a flat surface decoration and must not be apparently applied to or standing away from the surface of the cloth.

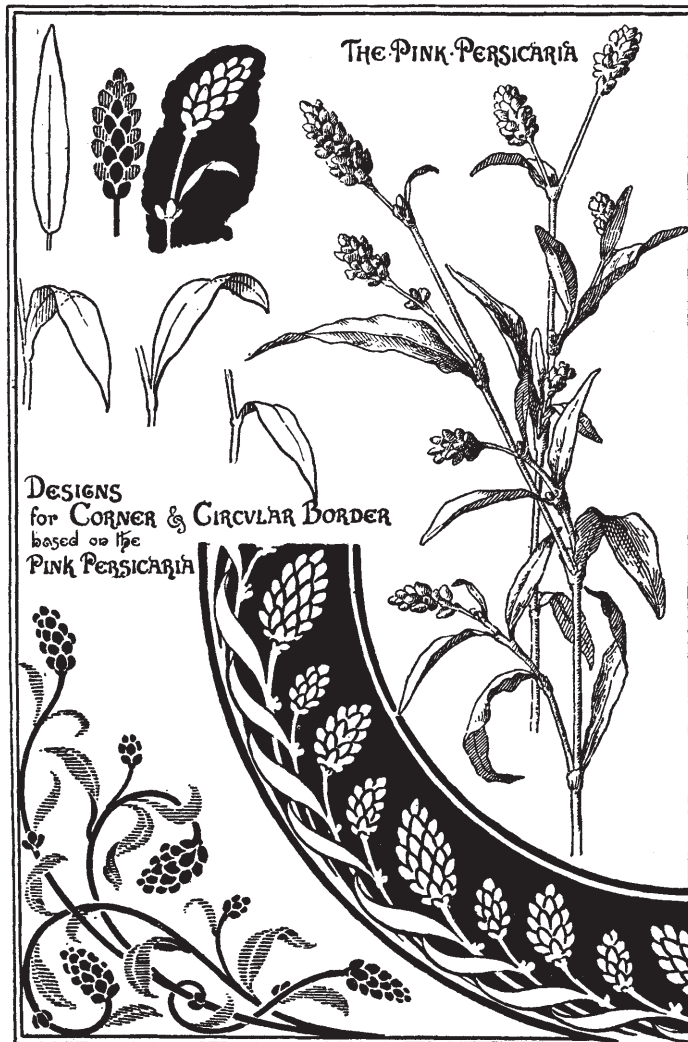
PLATE XLIV. gives a drawing from nature of a wild geranium, together with separate drawings of the seed vessels, buds, and of the flower, showing treatments that would be suitable for woven ornament. The seed vessels are rendered in grey and black, the patches of black being valuable as a contrast of colour and also in emphasising the form. There are three different methods given of dealing with the flower: the back view is very conventional in treatment, and is almost geometrical in the disposition of the parts, especially in the conventional rendering of the calyx; the front view is more naturalistic, and the form is suggested by the direction and shape of the white markings on the petals, while the solid black treatment of the pistil and stamens is useful as a contrast in the middle of the flower; the side view is an example of a shaded effect, but it is not intended to give an idea of relief, being shaded solely to add interest and quality to the flower.

PLATE XLV. is a design for an all-over repeating pattern based on the flower given in the last plate, and it will be readily seen how such a plant may be agreeably used as the basis of a textile design: the leaf is the main feature of the repeat, and the three parallel stems also give a strongly accentuated element. The flowers show a slightly shaded





ALL-OVER DESIGN BASED ON THE WILD GERANIUM.



PLANT FORMS IN TEXTILE DESIGN

effect, and the large leaves are cut up by patches of half-tone which indicate their character in an ornamental manner.

PLATE XLVI. gives a drawing from nature of the pink persicaria, a common wayside plant having no pretension to rank above the level of a weed, but lending itself not unkindly to ornamental treatment. The drawing of the plant from nature gives a number of instances of a simple leaf in various turned positions, and if drawings of such leaves as these be made, the student will derive great assistance in grasping the almost infinite variety of form which natural foliage suggests, and which is so difficult to invent without constantly repeating oneself.

PLATE XLVII. gives a drawing from nature of the garden pea, a plant that is well adapted to use in design. A very useful part of this plant, and one that is not present in the previous examples given in this chapter, is the tendril, which can be made very valuable in binding together the different portions of a design, and thereby preventing any undue looseness or sense of weakness; the flower also assumes very graceful shapes in all its stages from the bud to the full flower, and the leaves, by their variety of size and shape, give ample scope to the designer; the fruit or pod is also quite capable of being brought into use; the fruit is a part of plant-form which is often neglected, though in many cases it is quite as useful as the flower, if not more so. In the design at the corner, based on the garden pea, the central feature is the flower brought against the large leaves in a flat, conventional manner; the design is symmetrical upon the mitre line of the corner, and all the parts of the plant are introduced with advantage, including the pod and also the tendrils, the latter being carried into the field so as to break and round off the angle.

PLATE XLVIII. gives an all-over repeated pattern based on the garden pea, the principal features being the flower backed with leaves, and the strongly-marked stem lines.

ORNAMENTAL DESIGN

The leaves behind the flower are divided up by patches of tone so as to suggest the veining, and to bring out the flower; for this purpose the latter is also outlined with black, this black line being repeated in the main stem lines. The smaller leaves which fill up the ground are made flat and simple in shape, no attempt being made to imitate the irregular forms of the same leaves as seen in nature. For the decorative treatment the simple flat shape is preferable, and conforms better with the conventional lines on which the design is built up.

PLATE XLIX. gives a drawing of a crocus plant, together with a design based on it for the border of a linen table-cover. A strong feature of the design is the graceful radiation of the leaves and flowers from the bulbous root; it is effected in three groups, a central one and two side ones, these groups of radiating forms being broken by the bent leaves, which serve the double purpose of connecting the repeats together by festoon-shaped curves in the direction of the length of the border, and also of destroying any sense of monotony that might exist if the leaves and flowers springing from the root were uninterrupted. The vertical growth of the design is in this case very well suited to the position which the border of a table-cover generally takes when in use, hanging over the side of the table. The subsidiary border at the bottom of the design is interesting as showing how the bulb and root fibres may be used as the motive of ornamental pattern.



GARDEN PEA
from Nature

CONVENTIONAL DESIGN
based on the
GARDEN
PEA.

PLATE XLVIII.



ALL-OVER DESIGN BASED ON THE GARDEN PEA.

PLATE XLIX.



BORDER DESIGN BASED ON THE CROCUS.

CHAPTER XIII

TRADITIONAL OR ABSTRACT ORNAMENT

THE term "traditional ornament" means ornament which has been handed down from one age to another during the progress of centuries, and all ornament of an abstract character which has no direct relation to any plant or flower in nature is traditional ornament in so far as it is a modification of something of the same character which has been produced in a previous style. The details of this ornament are composed of flowers and leaves of a purely imaginary or ideal kind, which in some cases may be suggested by nature just in so far as they may have corolla and calyx, stalk and leaf, but little else that will recall any individual flower or class of flowers; in some cases it even happens that the conventional flowers are an impossibility so far as the construction of their parts is concerned, and yet at the same time, from an artistic point of view, they may be very beautiful. Traditional ornament may also be composed of imaginary forms and shapes that are not derived from plants or any natural objects, such as scrolls, &c.; they are simply abstract shapes that conform to the laws of what is beautiful in ornament. Traditional ornament has arrived at its present state by a process of growth, each age has added to it and stamped it with its own charac-

ORNAMENTAL DESIGN

teristics. There is no doubt but that it began with imitations of natural foliage and objects, but these imitations became more and more abstracted and conventional until they have arrived at a state where little or nothing of the naturalistic is left.

To follow the history of traditional ornament would require a book to itself, it is such a wide subject ; to do this would be of great use and interest, but it is not within the scope of this work. Its history dates from very early times ; the oldest examples of ornamented textile fabrics that can be dated with certainty carry us back to about one thousand years before Christ, but it is not till we come to the period of the Renaissance that we find examples of much artistic value. The art of weaving was held in great esteem during the middle ages, and there are still existing many beautiful examples, some in museums and some in old houses, dating from 1200 to 1700, which show a skill both in design and knowledge of weaving that can bear comparison with the best work of the present day. We cannot do better than recommend students to study these examples, either in museums or from folios of photographs that are published, to aid them in forming a good feeling for correct taste ; these early examples are almost invariably worthy of being followed.

PLATE L. contains numerous examples of varying dates that will serve to illustrate more practically the characteristics of traditional or abstract ornament. FIG. 1 is a curious combination of shapes ; the leaves are oval in form with scalloped edges ; the stalk does not join the leaf proper but almost encircles a small three-lobed leaf. The flowers are a kind of conventional pink and have no natural affinity to the leaves. There is also another way of regarding the relationship of the whole design. One may consider that the small thin leaves belong to the pink—they are something like the natural ones ; in that case we must consider the

PLATE L.



VARIOUS TYPES OF ABSTRACT ORNAMENT IN WOVEN FABRICS.

TRADITIONAL ORNAMENT

scalloped shape forms not as leaves but as some extraneous fanciful arrangement. FIG. 2 is composed of a series of alternating scalloped and pointed forms radiating from a centre. FIG. 4, Spanish seventeenth-century work, is built up of a number of forms varying in thickness and shape without any idea of copying natural ones or even suggesting a floral origin ; it is a design for a continuous border arranged vertically, and serves well to illustrate conventional ornament in which even a suggestion of natural foliage is not permitted. The forms that are used are such as might easily be made with a brush, and they are built up on abstract principles, as symmetry of general arrangement, contrast between the larger masses and the smaller ones, and also contrast of direction in the way many of the lines are made to contradict one another at the points of contact ; other principles are illustrated which the student will be able to see for himself. FIG. 5 is a conventional leaf from a piece of cloth of Italian make of the fifteenth century ; this example comes a little nearer to having a suggestion of nature about it than the last one, but still it is not like any particular type of natural leaf. It has the general proportions of a leaf, but the serrations are entirely an invention. FIG. 6 is a flower from a design of the same date which is also to a great extent an abstraction ; it has a calyx which hangs down over the stalk, and a corolla that is turned upward, and at the centre a projecting part that might correspond to the pistil of a flower. So far it follows nature in the arrangement of its parts, but further than that there is no close resemblance to it. It might just as well be described as a series of radiating lines, and in the complete design it serves the purpose of contrasting with the straighter lines of the conventional leaves.

The horizontal border, FIG. 8, is an illustration of the use of conventional leaves and flowers of no particular type ; these are afterwards decorated with other floral forms, as in

ORNAMENTAL DESIGN

the case before us. The leaf is white on a dark ground and is regularly serrated ; within it is placed another shape, almost like a piece of seaweed, which is brought out black against the white leaf. It is a treatment that it would be very difficult to find an authority for in nature, but all the same it is very useful in ornament, for in this particular case it is almost the making of the design. If the whole leaf were left white the mass would be too clumsy and heavy, but, as it is, the white is divided into two portions by the black serrated band. The flower is ornamented by a spray of smaller flowers that start from the base ; this is a very peculiar treatment that has often been had recourse to, and although it may be very illogical, can be made very effective. The reason why such super-ornamentation is used is to gain greater variety of lines ; to put in only the veins and markings that one finds in nature would result in a design of less richness of effect.

PLATE LI. contains several other examples which are abstractions rather than copies from nature. In FIG. 9 the flower is arranged with the petals in a fan-like order, which are decorated with small compound leaves after the manner of the last example. FIG. 10 is a very daring example of the treatment both of fruit and leaves, the fruit being suggested by three forms that cut one another at a point at the top, and although totally impossible, almost to the extent of being absurd, they result in a very beautiful shape. The leaf is also eccentric ; instead of coming to a point, it is bifurcated or split at the end and divides out to two points instead of the usual one. It helps to ring the changes in the shaping of leaves, and thus assists in gaining greater variety. The example from a Flemish loom of the eighteenth century is a curious treatment of both leaves and fruit. They seem to have been regarded only as ground-work shapes to break up with other ornaments. In FIG. 12 the lower leaf is ornamented at the centre and has a border

PLATE LI.



FURTHER EXAMPLES OF TRADITIONAL ORNAMENT.

TRADITIONAL ORNAMENT

which seems to be an imitation of lacework. FIG. 13 is a combination of foliated forms and rigid lines arranged on a definite plan, the principal lines being arranged like the flutings of a shell. The last figure is composed of conventional flowers and leaves. The large leaf is a particularly graceful example of variety of line. Some parts of the contour are composed of long sweeping curves which contrast pleasingly with the shorter curves and the serrated edges. The surface of the leaf is covered with lines and shapes running with the length of the leaf, and others across.

We can best understand why some ornament is naturalistic and other ornament conventional or abstract, and also when one class should be used and when the other, by studying the principles underlying the two.

Ornament that is entirely conventional or abstract is dependent for its interest upon the beauty of its forms only; it has no borrowed interest such as we find in naturalistic ornament. Abstract ornament is not an adaptation from nature, and is therefore without that warm interest that natural objects always create. For example, if one sees a rose or a bit of apple blossom depicted in any design, however conventional it may be, it creates within us a feeling of pleasure much akin to that of meeting an old friend. Conventional ornament is cold and unsympathetic; it is made up of a number of more or less meaningless forms that are brought together with the object of pleasing the eye without going deeper into the sentiments of association of ideas. In conventional ornament the principal lines and each piece of detail should be carefully studied and drawn out in the closest conformity to the principles of what is beautiful in design, and it must always be remembered that they exist for no other purpose than to please the eye. Any line or form that is not æsthetically beautiful has, therefore, no reason for existence. It might

ORNAMENTAL DESIGN

be described as a style that is entirely given over to grammatical construction on correct principles ; it contains no meaning and gains nothing from suggestive associations.

Abstract ornament, then, is dependent for all its interest upon the grace and beauty of the forms and the arrangement of the lines in an æsthetic sense ; it pleases the eye only, without any appeal to the reason or sentiment. It may often be noticed that much of this class, if regarded from a rational point of view, is altogether an absurdity, having no evidence of a reasonable process of growth such as we see in nature ; in fact, it is often purposely made grotesque in character. However grotesque or illogical it may appear, it may still be excellent ornament and in good taste, providing the forms are graceful, but however unnatural it may appear, it must not be without some kind of order ; ornament must not be allowed to run mad, there must be some kind of reason in the most grotesque features.

In constructing conventional ornament it is, therefore, of the utmost importance that each line shall receive careful study ; it must be beautiful of itself, and must also form into a graceful arrangement with all the other lines and forms of the design. No part of the design can be left to haphazard chance, but every detail must have a clear definition and a refined shape. This will be easily seen on referring to any of the conventional designs given in this work.

The conditions under which conventional ornament can be best applied are for materials where severity of form, and clear, firm, and graceful lines are required. It does not always happen that natural flowers are desirable or appropriate ; cases often occur where abstract forms are more suitable than natural ones and in better keeping with the surroundings.

The way for the student to learn this class of ornament

TRADITIONAL ORNAMENT

is to make numerous note-book studies of past examples. The more varied the assortment of designs that can be thus gathered together and studied, the greater variety of detail is he likely to get into his own. It is a style where there is little room for originality; the only originality that can be displayed is in evolving new ways of combining the different details. Nearly every conceivable kind of detail has been used over and over again, and all that can be aimed at, therefore, is to produce new variations of them; this can best be done by becoming familiar with as many examples as possible and making use of them when necessary.

ORNAMENTAL DESIGN

CHAPTER XIV

ANIMATE FORMS, PROPERTIES, ETC., IN TEXTILE DESIGN

THE value to the designer of that part of nature included by the term "plant forms" has been already shown, and it will be admitted without question that for ordinary design purposes the vegetable kingdom is the most useful of all natural sources in providing material that can be turned to account in the production of ornament ; the animal kingdom is, however, another very fruitful source of suggestion, and helps the designer in producing a new series of ornamental forms and design effects which would otherwise—that is, without the help that this branch of nature gives—never be brought into existence ; and it is because of this that animal forms are used at all—not so much for the sake of the animal itself as for the hint which it gives in producing a further variety of ornamental form.

The use of animal forms for the purposes of cloth decoration seems perhaps somewhat incongruous, and in some fabrics they would be obviously out of place ; they certainly cannot be so generally used as plant forms, which can be brought into service as the motive of design for almost every class of textile ; but just as plant forms have to be conventionalised in the process of being turned into ornament, so also must animal forms, only much more so.



.1. Sicilo-Saracenic . XII centh



.2. Sicilo-Saracenic . XII centh



.3. Saracenic . XII centh

EXAMPLES OF ANIMATE FORMS IN TWELFTH CENTURY FABRICS.

ANIMATE FORMS IN TEXTILE DESIGN

The only admissible rendering of animal forms is a very abstract one, and it is impossible to conceive of a realistic treatment of them being agreeable in any class of woven fabric ; they must not even approach realism, and the only relation which they can have to design is in suggesting another variety of ornament. The fact of frequent repetition is, apart from anything else, a sufficient reason for this abstract rendering ; it is an axiom in ornament that the higher the organic rank of any part of nature which is being used as the motive of ornament, the less capable it is of being constantly repeated, and animal forms, being organically on a higher plane than plant forms, are less adapted, unless very abstract in treatment, to such mechanical repetition as the process of weaving demands.

If reference be made to the illustrations on PLATE LII., this conversion of the animal into something that primarily serves the purpose of ornament may be more readily understood. In FIG. 1, for instance, which is from a Sicilo-Saracenic fabric of the twelfth century, animate forms are brought into use in a thoroughly pleasing manner. There is no attempt at the imitation of nature, the animal and bird forms being treated solely with a view to the production of good lines and pleasing shapes, and they make an excellent filling for the space between the large heart-shapes. The sense of movement and action is a quality that may be profitably taken advantage of in using animate forms for decorative purposes, and even in the flat treatments that one has to be content with in a fabric it is possible to suggest this with good effect. In the case of the design under notice the action given to the animals and birds is such as to make the creatures fall into harmonious lines with the rest of the design, and it helps them to fill the space for which they are destined. FIG. 2 on the same plate also illustrates the decorative use of animal forms. The winged lion that fills in the ogee-shapes is an ornamental device

ORNAMENTAL DESIGN

that has doubtless a symbolic meaning, and a very effective result is obtained by the radiating series of lines which indicate the separate parts of the wings.

FIG. 3 is a very fanciful design composed of many elements, and is very typical of the work of the Saracenic weavers during the twelfth and thirteenth centuries. The chief feature of the design is a nondescript bird standing in what is no doubt meant to suggest water; this again rests upon a conventional rendering of cloud forms, from beneath which issue rays of light; the neck of the bird is interlaced with the folds of a sail—a curious arrangement, and one which has probably a symbolic or emblematic meaning. The chamois is standing on a rock rising above cloud forms, which are only partly shown in the plate; a dog is also included, the legs being seen at the top of the illustration. The design as a whole seems to suggest the sport of game-driving, and it doubtless has a story of its own to tell, which of course gives added interest; but, after all, this is of less importance, when regarded as ornament, than the skilful management of all the parts of the curious combination, which are so conventionalised and blended together as to produce a good decorative arrangement and one that will conform to the requirements of repeating pattern.

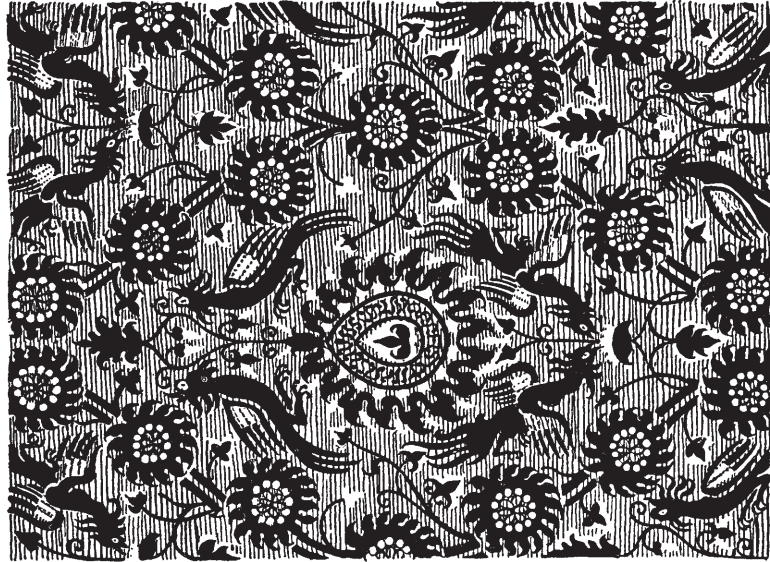
Other designs which further illustrate how animate forms may be satisfactorily dealt with in ornament are given on PLATE LIII.

In FIG. 1, for instance, the grotesque bird forms are made to fall into the lines of an ogee shape or nearly so, and the bird shapes afford a useful contrast to the floral ornament. In FIG. 2 an eagle seems to be attacking a swan: this design is a good instance of the way in which animal or bird forms should be made to harmonise with the floral or other ornament with which they may be combined. In this case the lines of the eagle and swan are in perfect



Sicilian. XIII cent.

2.



Sicilian. XIV cent.

1.

ANIMATE FORMS IN THIRTEENTH AND FOURTEENTH CENTURY FABRICS.



1. From Lucca. Fabric of XIV cent^s



2. from Zurich fabric of XVI cent^s

ANIMATE FORMS AND PROPERTIES.

ANIMATE FORMS IN TEXTILE DESIGN

harmony with the other parts of the design ; they do not detach themselves at all from the floral ornament, but combine with perfect ease and completeness, while at the same time a certain amount of contrast in form is given by the radiating lines of the wings and the shape of the birds as compared with the shape of the floral details. It is the contrast of form, together with the harmony of line and arrangement, that makes the design so satisfactory as a whole.

PLATE LIV. gives another Italian design (FIG. 1) in which bird forms are used with very good effect, and much of the strong character which it possesses is due to their use. Looked at from a naturalistic point of view they are quite grotesque, though perfect when regarded as ornamental features : they contrast most effectively with the floral ornament, the mass of white given by the body of the bird and the shoulder of the wing, together with the sharp radiating lines of the feathers, making an excellent foil to the richly foliated ornament with which the birds are combined. In FIG. 2 a symbolic animal form and heraldic shield are introduced into a repeating pattern ; this is a sixteenth-century design, but it is no unusual thing even in modern times to use such elements, and where fabrics are woven specially for the use of large establishments, the embodiment of a shield or crest in the design is often required.

Examples of Japanese ornament with bird forms are given on PLATE LV. FIG. 1 is from a Japanese silk fabric, and the same abstract rendering that has been pointed out in the examples given of Italian textile ornament is again present : the birds—depicted in the act of flying—are so far removed from the realistic as to be quite satisfactory when seen multiplied in the woven fabric, and the action of flight gives opportunity of using in the wings and tail a series of graceful waving lines that are in good contrast to the shapes of the floral ornament. FIG. 2 shows a very good decora-

ORNAMENTAL DESIGN

tive treatment of a bird form within a square, and a further example is given in DIAGRAM 61, which is from a Japanese design that seems to suggest birds swimming on water.



DIAGRAM 61.

The parts of a bird—such as the wings and feathers—have also great beauty both in form and colour, and they are admirably fitted for ornamental purposes. The feather is particularly useful, especially in some instances, the peacock's feather for example, which—from the graceful lines that it falls into and the rich harmonies of colour which it possesses—is capable of supplying many a hint to the designer.

Insects of various kinds are also very well adapted for decorative use, and particularly winged insects such as butterflies, moths, and dragon-flies: an illustration of this may be seen in DIAGRAM 62. Reptiles of various kinds are often of great beauty of form, and though there is perhaps something objectionable in applying reptiles to many forms of cloth decoration, the fact remains that such creatures as the

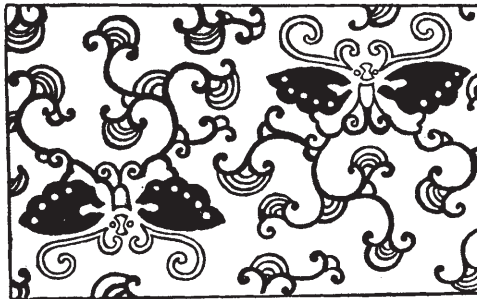


DIAGRAM 62.

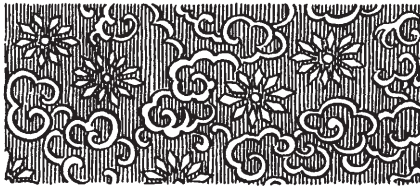
snake and lizard may, when not inconsistent with the use of a fabric, be turned to good account, though, of course, like all other animate forms, they must be treated in an abstract manner.



1.



2.



3.

JAPANESE RENDERINGS OF ANIMATE AND CLOUD FORMS.

PLATE LVI.



CONVENTIONAL FISHES AND WATER, JAPANESE.



CONVENTIONAL TURTLES AND WATER, JAPANESE.

ANIMATE FORMS IN TEXTILE DESIGNS

Fishes are also used extensively by designers, and **PLATE LVI.** gives an instance of the way in which a Japanese artist has made them the leading motive of a repeated pattern; the pliable nature of the average fish gives opportunity for turning it into a great variety of graceful flowing curves, which will combine very easily with the conventional representations of water with which fishes are generally associated. In this design the fish is made to follow the general outline of the circle, and the water is suggested by graceful flowing curves that go very successfully with the contrasting circular line of the fish: in this case the designer has evidently intended to indicate rough tumbling water, and the ends of the wave lines provide a very effective feature by the hint which is given of the breaking of the wave into spray and bubbles. There is a very fine sense of rhythmical movement in all the parts, and the design hangs together with perfect ease and completeness.

DIAGRAM 61 gives a suggestion of water in a more peaceful state. Another effective rendering, and one which is quite different from the two previous ones referred to, is seen on **PLATE LVII.** The series of curved and waving lines indicating the water give decided character to the pattern, and especially in contrast to the conventional turtles with which they are combined: in addition to fishes, shells and other water objects, including water plants and seaweed, may be suitably brought into use for decorative purposes.

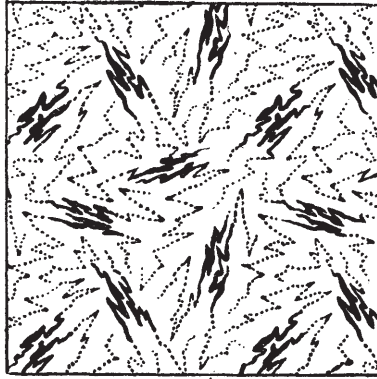
The extent to which nature may inspire the designer is practically limitless: material which will suggest new forms comes from every quarter, and without any great trouble in the finding, providing we go about with open eyes and receptive minds. The vegetable kingdom is doubtless the principal hunting-ground, though there are many less obvious sources that may be looked to, and which, because they are less obvious, are more likely to give birth to designs that are out of the common. The way in which such a

ORNAMENTAL DESIGN

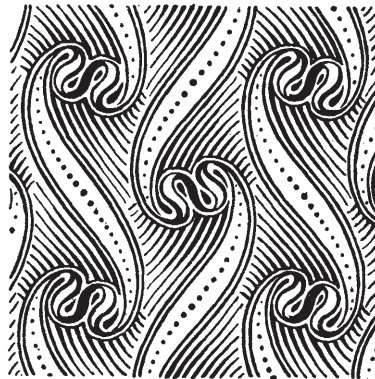
seemingly unpromising element as water may be used has already been shown : then there are the elements of fire and flame, the sun, moon, and stars, the cloud effects in the sky, the effects of frost as pictured on our windows in winter, the natural grain of various classes of wood, the web of a spider, the sectional markings of stones and fossils—all these and many other sources are available. We are disposed sometimes to imagine that in such an old subject as ornament all the parts of nature that have any value to the designer have been explored time after time, but this is far from being the case : as a matter of fact the historic aspect of ornament gives evidence of only a comparatively small number of elements in nature having been used, and it is only in more recent times that designers are taking advantage of the diversity of material which nature provides in every corner of her rich storehouse of beauty.

The three following plates give Dress Fabric designs that are to some extent suggested by nature, though they are very abstract in character. In PLATE LVIII. FIG. 1 is a very conventional treatment of lightning, and FIG. 2 is suggested by the curving of a riband, the intervening ground being filled with gradually thickened curves producing a slightly shaded effect. FIGS. 3 and 4 are ground effects, the former being a very abstract treatment of water, and the latter suggested by watered silks.

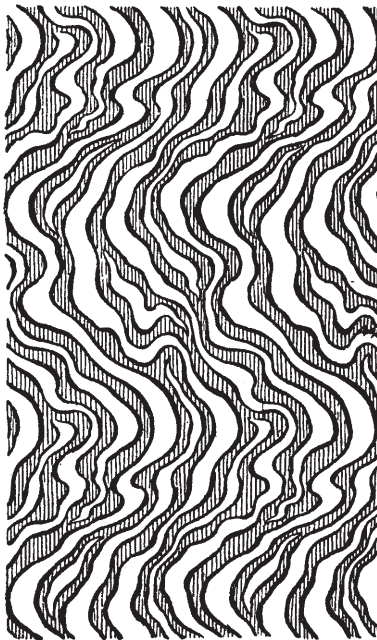
In PLATE LIX. ground treatments combined with superposed ornament are given : they have very little connection with anything in nature, and are simply surface decoration that is useful in breaking up the empty spaces with unobtrusive pattern : such ground designs as these are generally brought out by contrast of weave, with warp and weft of the same colour ; the effect is in this way so subdued as not to overpower the sprig pattern or spot ornaments that are placed on this ground pattern and which are intended to be of primary importance.



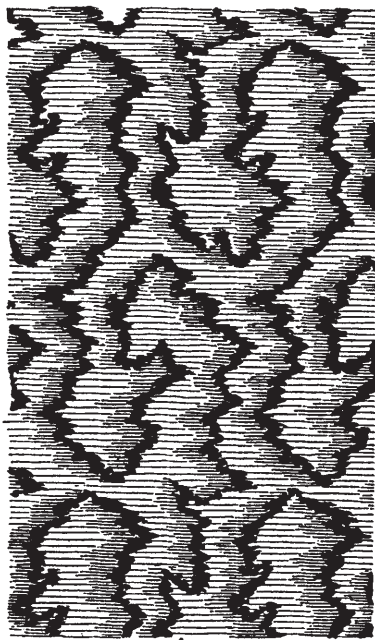
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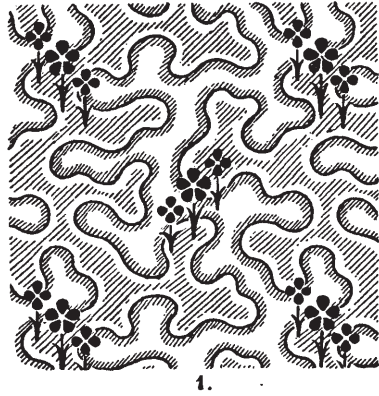
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4.

BROKEN GROUND EFFECTS FOR DRESS FABRICS.

PLATE LIX.

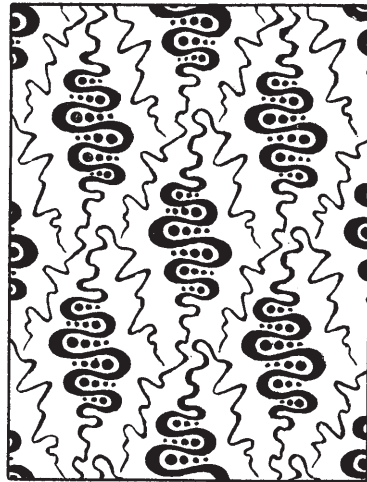


SPOT FIGURES WITH SHADED GROUNDS.

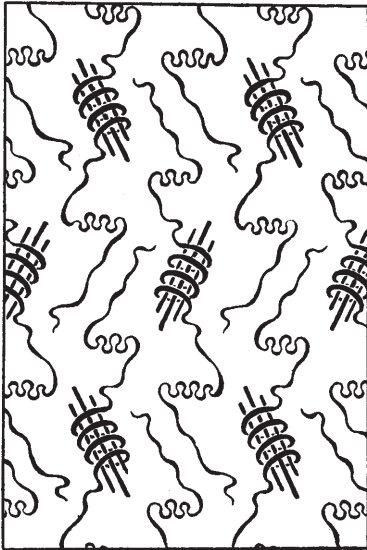
PLATE LX



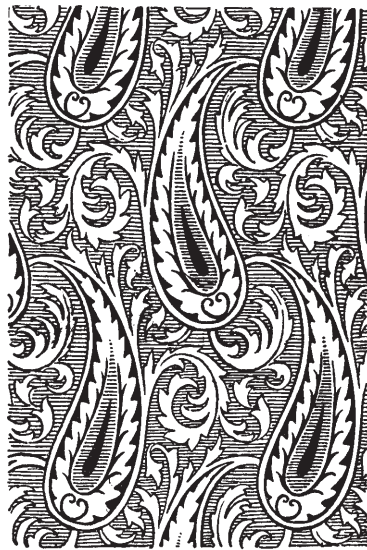
1.



2.



3.



4.

NO. 1. PALM-LEAF PATTERN. NO. 2 AND 3. PROPERTIES.
NO. 4. PINE-CONE PATTERN.

PROPERTIES ETC. IN TEXTILE DESIGN

PLATE LX. gives further examples of designs that are well adapted for dress fabrics. They are all very conventional, and have only a very distant relation to any prototype in nature, though they are good for their particular purpose. The main purpose of textile ornament is, after all, to give added beauty to a fabric, and it is not absolutely essential that one's design must be traceable to something that exists in nature. FIG. 4 is a treatment of the pine-cone pattern, the chief feature of which is the contrast between the firm graceful line and shape of the pine-cone with the broken and irregular character of the remaining parts of the design.

ORNAMENTAL DESIGN

CHAPTER XV

LIMITATIONS IMPOSED BY THE STRUCTURE OF A FABRIC

IN dealing with this chapter it is assumed that some knowledge of the process of weaving has been previously acquired ; but perhaps it may be advisable for the benefit of any who do not possess this technical knowledge to give a brief explanation of the way in which ornamental patterns are produced in the loom.

The design is usually first of all sketched, on ordinary paper, the same size as it would appear when woven ; one complete repeat of the design is then drawn upon point paper. This paper, which is specially prepared for the purpose, is ruled over with lines crossing each other at right angles, each small square between these lines corresponding to a warp or weft thread brought to the surface of the fabric. The design, which is necessarily, in many fabrics, very much enlarged when put on to this point paper, is drawn out after the manner of the illustrations on *PLATE LXI*. After being drawn in this way, it is then put into the hands of the card cutter, who takes every horizontal series of squares of the design paper on which the repeat of the pattern is drawn, and cuts or perforates cards according to the way in which the small squares or points in this horizontal line are filled up with the pattern

LIMITATIONS IMPOSED

on the point paper, a separate card being thus prepared for every throw of the weft thread by the shuttle. The cards are then stitched or laced together in their proper order. The work which these cards perform is to regulate a series of needles, some of which go through the holes, others being prevented from doing so by the portion of the card which is not perforated: these needles in their turn act upon the harness of the loom in such a way as to cause some of the warp threads to remain stationary and horizontal, while others are raised, and when the shuttle is thrown between the raised and the stationary warp threads, the weft which the shuttle carries will appear on the surface of the cloth where the design requires it to do so, while in other places, where not wanted to produce pattern or to stitch down the warp threads, it will go to the back of the cloth; each throw of the shuttle is regulated by these successive cards in definite order according to the pattern, and the design on the fabric will gradually develop as the cloth is woven.

There are often two, three, or even more shuttles used, according to the number of colours employed in the weft, each shuttle carrying a separate colour. As a rule the pattern is brought out by a combination of warp and weft, but there are some textures figured chiefly by the weft, and others, such as Brussels and tapestry carpets, in which the pattern is entirely the product of the warp yarns, the weft in the latter being solely for the purpose of interlacing the warp and for producing a firmly built and well-tied cloth.

It should be stated that the repeats of a design are produced automatically from the cards which have been prepared, and when more than one repeat comes within one width of the cloth this is effected by carrying branch strings in the harness from each central string, so that the corresponding warp threads in each repeating part are similarly and simultaneously acted upon.

ORNAMENTAL DESIGN

In textiles, as in all forms of applied art, there is of necessity a close relation between the material, the structure of the fabric, and the ornament which decorates it; this relation is of more than ordinary importance in woven designs on account of the technical limitations which have to be considered, and it is absolutely necessary that the designer should give some attention to this side of the subject. On the one hand there is the great diversity of fibre used, while on the other hand we have the great variety of surface effects into which the fibre or fibres may be woven, and in order that the designer may give full value to his ornament when woven, these questions must of necessity be considered; for instance, there is a considerable difference between a woollen and a silk dress fabric, and it will be obvious that a design which might be perfectly satisfactory in the one might be quite out of place in the other, because of the difference of thickness in the fibre producing a difference in surface texture that these fibres present when woven. To take two extreme examples, we have at one end of the scale the primitive weaving which may be seen in the plaiting together of grasses for basket work, mats, and similar purposes, and at the other the rich fabrics that may be produced in such a delicate fibre as silk, and it goes almost without saying that any ornament which might be applied to one or other of these greatly contrasting fibres would be entirely different and would be regulated by very opposite conditions; the former would only lend itself to the production of patterns of a very geometrical character, such as the interlacing of the grass fibre might suggest, whereas in the latter the utmost delicacy of detail and refinements of drawing would be possible.

Between these two extreme cases there are many grades of thickness in fibre—wool, cotton, flax, and jute—all occupying an intermediate position and offering greater or less scope for artistic treatment. It follows, therefore, that the finer the

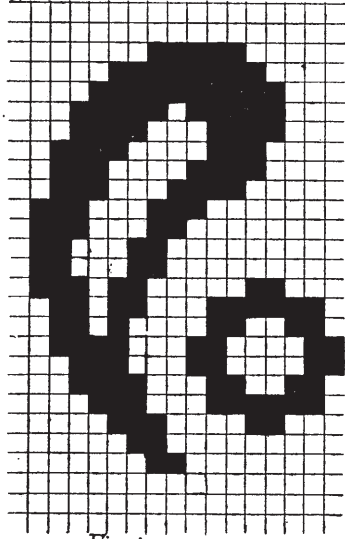


FIG. 1.

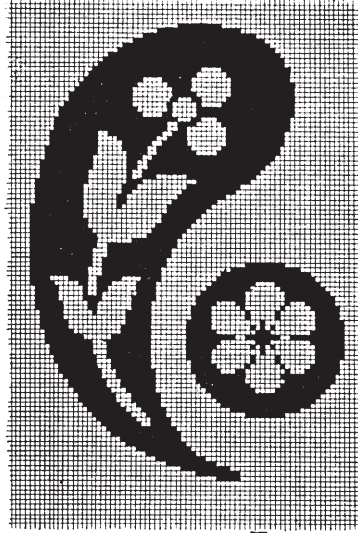


FIG. 2.

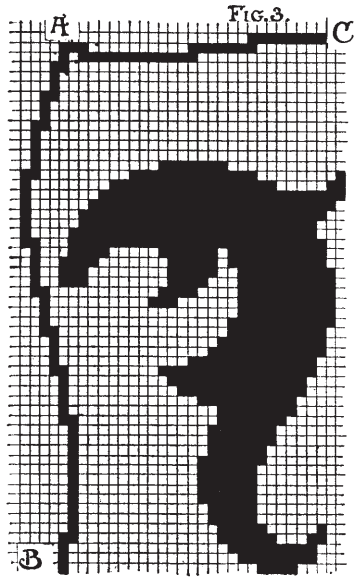


FIG. 3.

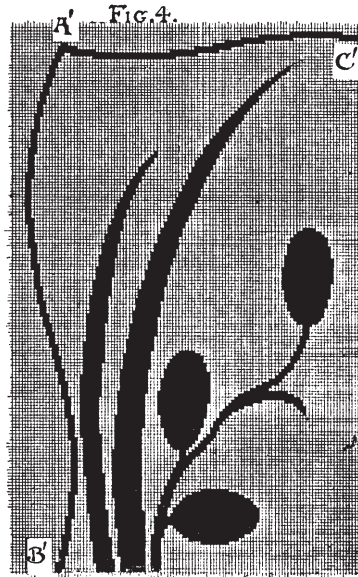


FIG. 4.

DRAWING OF CURVED FORMS FOR DIFFERENT SETTINGS.

LIMITATIONS IMPOSED

fibre used, the finer and more flexible will be the yarn that can be spun from it. In practice, the thickness of the yarn which has been spun from the fibre and the number of threads which, in a given space, will appear on the surface of the fabric when woven, must have primary consideration, and this may be still further qualified by the fact that the yarn is not always used singly. In such a fabric, for instance, as a Brussels carpet, the yarn is frequently three-fold ; that is to say, that three (or even more) separate yarns are folded together so as to make one fuller and thicker thread, this increased thickness giving added richness and softness of effect to the texture of the carpet and also giving greater wearing capacity and softness to the tread, though at the same time it imposes certain limits with regard to the choice of design.

The diagrams on PLATE LXI., which are intended to represent different fabrics to actual scale, illustrate the difference in treatment necessitated by varying materials. In FIG. 1 each small square represents the width of one warp-thread or one loop in the pile of a Brussels carpet. This diagram is the actual size of the fabric, allowing ten loops or ends to the inch, and if a curved form such as the one given were to be represented, the outline could only be shown by a series of steps, the steps being made so as to follow as closely as possible the shape of the curve.

This stepping is a necessity in all fabrics on account of the process of weaving, and even where very fine yarns are used it is present, though it follows that the finer the yarn and the greater number of warp and weft threads there are to the inch, the smaller and less evident these steps will be, and the greater will be the possibility of producing well-formed shapes. This may be seen in FIG. 2, in which the same curved form as that indicated in FIG. 1 is used ; in this case there are forty ends to the inch appearing on the surface, and it will be readily seen that the leaf is much

ORNAMENTAL DESIGN

more perfectly developed, and allows of more detail being introduced; the same will also be evident when the circular flower in FIG. 2 is compared with the corresponding shape in FIG. 1. It will be obvious from the comparison which these figures (each of which is actual size) afford, that it is impracticable on account of this stepping to produce absolutely perfect curves, and in the thicker or coarser yarns it is only possible to produce curves of very broken character. This is not necessarily a misfortune, however; it is natural to woven fabrics, and gives the ornament which may be applied to them a certain character that is not in the least objectionable, and may be even considered to give added beauty when properly used. Some of the richest of the hand-made Oriental carpets or the Axminster pile carpets have designs worked out in steps varying from one-fifth to one-seventh of an inch in size, suggesting in this way the tesserae of a richly-coloured mosaic.

There is now one point of paramount importance which must be always borne in mind when designing for fabrics that have an open texture, or in which the threads are thick, to avoid curves that run for great lengths in the direction either of the warp or the weft—that is, vertically or horizontally; curves of such a character would lose all their value as curves, and would appear instead as disjointed straight lines placed in steps. In FIG. 3, where there are twenty threads to the inch, such curves as AB or AC, the former running in a vertical and the latter in a horizontal direction, are instances of this unsatisfactory effect, and show the difficulty of suggesting a good curve, when running too parallel with the warp or weft.

The curves that are most typically satisfactory are those that run diagonally across the piece at, as near as possible, an angle of 45° : of course, it is obviously impossible to make all curves in that way; if they were made so, the

LIMITATIONS IMPOSED

design would be stupidly uninteresting and void of the necessary artistic qualities; but still this important fact must be recognised, and as many as possible should take a diagonal direction. Evenly rounded curves, such as circular ones, work very much in this way, but unfortunately they are not the most beautiful ones. It remains for the designer to decide between the choice of more or less circular curves, with their practical utility, and those of more variety and beauty; the choice must be ruled to a great extent, as before stated, by the coarseness or the fineness of the material.

In all coarse-textured fabrics it is better to let the lines of the pattern be simple and bold in character, aiming at the production of well-rounded and clearly-marked shapes. In fabrics of a finer character this difficulty to some extent ceases to exist, as will be seen in *PLATE LXI.* by comparing the curves *A'B'* and *A'C'* in *FIG. 4*, with curves of the same size and shape as represented in *FIG. 3*; in the former case there are sixty-four threads to the inch, and it is possible to get such curves as *A'B'* and *A'C'* with a more satisfactory result. A further illustration of the necessity of bold shapes in coarsely-built fabrics is shown by the leaf which is drawn in *FIG. 3*, as compared with the more delicate and subtle shapes of the pattern drawn in *FIG. 4*. In the former the curves turn much more quickly; in the latter, long sweeping curves, which deviate very gradually from the straight line, are admissible.

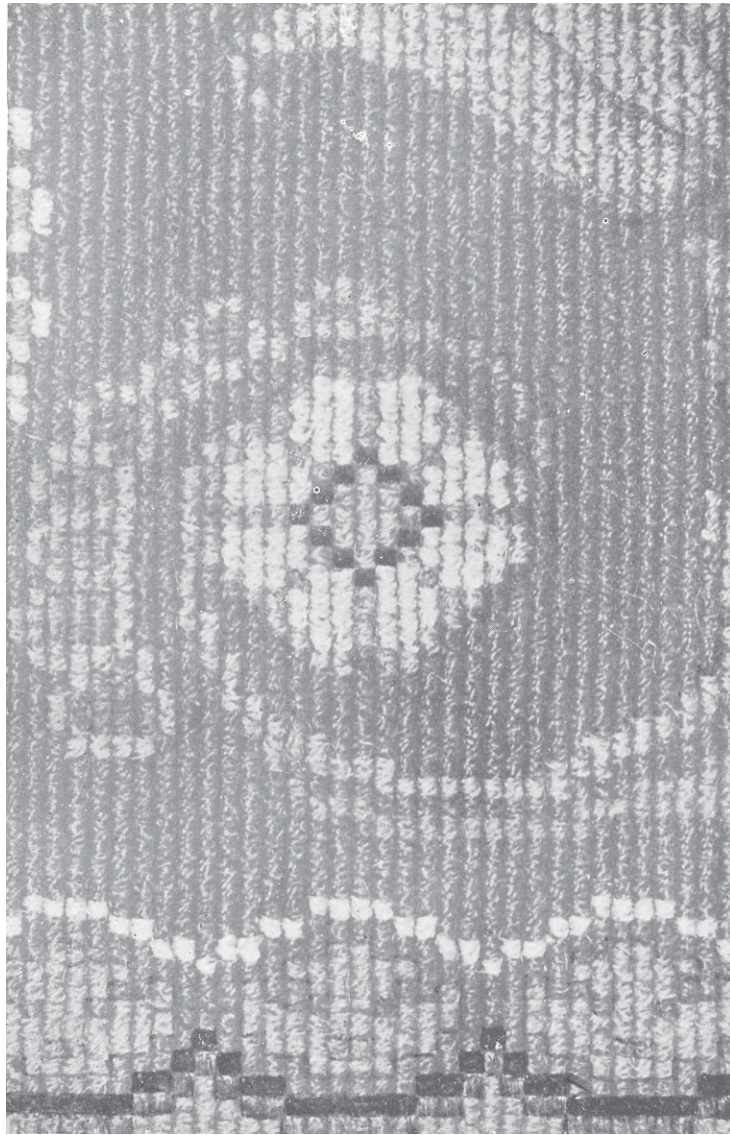
It will now be desirable to refer to the more typical kinds of textile work in order to indicate as far as possible the most appropriate ornamental treatment to be adopted. Referring first to the coarser build of fabrics, it will be seen in *PLATE LXII.* what the texture of one of the most important classes of carpets is, and in this reproduction of Brussels some idea may be gained of the size of the separate points or squares in the cloth; they number nine to the

ORNAMENTAL DESIGN

lineal inch, and in such a fabric it would be impossible to produce curves of a very subtle character ; the material necessitates that the design be composed of large forms, and even then it is advisable that they should be very bold and decided where curves are introduced, or frankly rectilinear where it is impossible to suggest well-marked curves.

The same also applies in a greater degree to designs for Axminster carpets, in which there are generally from five to seven points to the inch. In all carpet work the question of colour is of greater importance than the question of form. The nature of the fabric limits the designer from the point of view of securing refinement of ornament, but it affords exceptional opportunities for the display of rich combinations of colour, and many designs which are exceedingly commonplace as far as the pattern is concerned, are redeemed by the use of well-chosen colours.

Another class of woollen fabric is illustrated on PLATE LXIII. ; this is what is generally known as a tapestry, though the term "tapestry" has so many different meanings in the present day as to lead to some difficulty with regard to the exact definition of the term. The hand-made productions of the Gobelins works in Paris are called tapestries, and the same term is also used for that cheap class of carpet in which the colours of the pattern are produced by printing the warp with various dyes in such a way as to produce the design which is required when the printed warps are woven into the carpet. The piece which is given in the plate is from a woollen fabric, such as might be used for curtain-hangings or table-covers, and shows on the surface twenty ends to the inch. This is, as will be readily seen by comparison, finer in texture than the carpets shown in PLATE LXII., though it is sufficiently coarse to demand bold and well-defined shapes in preference to small and much-cut-up detail. In this particular fabric four distinct



BRUSSELS CARPET.



TAPESTRY.

LIMITATIONS IMPOSED

colours are used, a separate shuttle being provided for each colour, and they are woven into a cotton warp which ties the weft threads together so as to produce a firmly-built cloth.

In such a fabric as this, which, being practically all wool on the surface, is capable of withstanding a great amount of wear and tear, it is well worth while to obtain the best possible ornament as well as a sufficient variety of colour to give richness of artistic effect. The woollen fibre derives little advantage from its lustre, but the softness of effect which it possesses makes it specially adapted for giving value to colour combinations.

In PLATE LXIV. are given two illustrations of dress fabrics, the lower one being a woollen one, in which a finer yarn is used than in the tapestry just referred to. In this case there are about sixty-four ends to the inch, and it will be seen on examination of the pattern that forms of a lighter and more delicate character are possible both as regards the size of these forms and the more subtle curvature adopted.

This figure also suggests another matter of very great importance, and one that has not as yet been sufficiently explained, namely, what is termed shading. In this design, which is composed of a single weft of light colour and two warps—one of light colour and the other of dark—several different tones are produced by varying the weaves. In the ground, the light warp and the weft are brought to the surface in equal quantities by a plain weave, and the dark warp remains behind. In the darkest parts of the figure the dark warp comes entirely to the surface as a float, and thus forms the solid parts of the pattern. Between that and the lightest tones of the figure there are many intermediate ones, entirely the product of the different weaves. Referring to the figure, and especially to the small oval-shaped leaves, there is a slight gradation of tone from one side to the

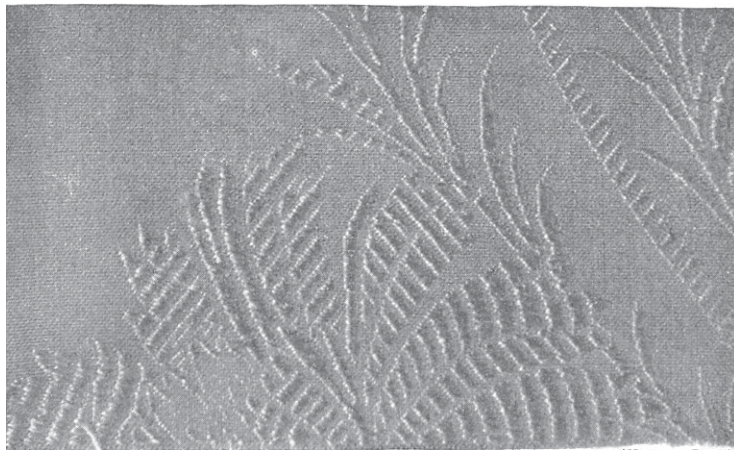
ORNAMENTAL DESIGN

other, and some of the long leaves are made darker at one part than another. A few of the long leaves are also made entirely lighter than others by combining the dark warp and light weft in varying proportions. Several of the leaves have so much of the light weft brought to the surface that they appear to be only like reflections of the others, causing them to retire behind and thus giving an appearance of depth and variety to the design. This light shading effect is particularly useful where two leaves meet together, and instead of letting them blend with each other, the lower part of one can be made gradually lighter and more retiring into the ground. In this way it will appear distinct from the darker leaf, and each one will thus be permitted to retain its own form without merging into the other.

This same method of shading is often adopted in designing small spot figures, by varying the weaves from one side of the spot to the other, making a gentle gradation from light to dark. It is not advisable to use this shading with the intention of giving the appearance of relief to the figures; to make anything that would have the appearance of relief would be in decidedly bad taste for a flat woven surface; the shading should only be used to give lightness to the figure and accentuate the forms and shapes.

In the upper half of *PLATE LXIV.* we have a fabric in which the pattern is brought out in mohair weft upon a worsted ground; in this instance the lustrous quality of the mohair is taken full advantage of, and instead of large flat masses (such as we see in *PLATE LXIII.*), the mohair pattern is broken up and we have a number of separate small portions both in the leaves and in the flower. It will be seen that in the flower shown in the lower part of the fabric, the petals are not left plain and unbroken, but are cut up by lines which cross the petals in a diagonal direction; the same device is also adopted in the stem, and the general effect produced in the pattern is such as to give sparkle and

PLATE LXIV.



DRESS FABRICS—MOHAIR LUSTRE FIGURE, AND ALL-WOOL TEXTURE

LIMITATIONS IMPOSED

brightness to the fabric; every separate leaf or every separate division in the petals catches the light by the slight projection above the surface of the cloth which the mohair has, and such fabrics when worn are very effective on account of this sparkling lustrous quality that the pattern gives in contrast to the dull ground upon which it is woven: this cutting up also serves the purpose of tying down the floats of mohair weft, and of avoiding any long floats.

Another large section of woven fabrics is that of Damask; a true damask is one in which the ground and the pattern are worked out in sateen weaves, and the contrast which is necessary in order to bring out the effect of the pattern is obtained by making the long floats in the ground from the warp threads, and in the pattern from the weft threads, or *vice versa*. In this way the play of light upon the fabric defines the ground from the pattern, and according to the angle from which the fabric is seen, the pattern will be lustrous, or the ground will have the sateen-like effect. Damask being a question of weave effect rather than of any particular fibre, may be produced in various materials, linen, silk, and bright wools being those in which it is most effective.

Damask weaving, as its name implies, originally came from Damascus, and was brought over to Western Europe by the Crusaders, along with the draw loom which was used in its manufacture. The true damask has an 8-shaft sateen weave in both ground and figure, but in modern weaving the term "damask" is used in a much more general sense and is frequently meant to describe fabrics in which the ground only is sateen, while the pattern is brought out by some other weave effect—as a twill, for instance—which, by the comparative dulness that it may have, will contrast with the lustre of the sateen ground. As a rule the charm of a damask is retained most successfully by adopting a large and dignified class of ornament, rather than a light and

ORNAMENTAL DESIGN

dainty type of pattern, though much depends on the particular use for which it may be intended ; for some purposes the lighter class of ornament is more suitable, as, for instance, a linen damask table-cover, but in curtains and furniture fabrics the ornament would more appropriately be of a larger character. Some of the old Italian damasks are exceptionally good as models for the guidance of the student. In cases where the ground only is brought out with a sateen effect, and in which the pattern is dull by contrast, it is desirable to make the most of the rich lustrous sateen ground, so as to let it occupy the largest area, and the design should be arranged with this end in view.

In silk fabrics the delicacy of the fibre, combined with the richness and wearing capacity which it possesses, gives every opportunity for designs of an elaborate and expensive type. Being a costly material in itself, it would be false economy to allow it to suffer in any way by poverty of design ; in this material practically anything that can be drawn on paper can be reproduced with almost perfect fidelity of form in the loom. In *PLATE LXV.*, which is taken from a silk brocade and is actual size, we have an instance of the almost perfect way in which an elaborate design like this chrysanthemum pattern may be rendered ; every leaf or petal is firmly indicated, and the effect is heightened by a suggestion of shading produced by varying the weave, the lighter petals being in solid weft, the half-tones by a mixture of the ground colour with the white weft ; the leaves, which are brown, are also enhanced by the addition of a somewhat similar shaded effect. Although in silk it is possible to get extremely small details, it is not advisable to attempt too much in this way ; a design is not to be judged by the microscopic detail which may be put into it, but rather by the simplicity with which the desired result is secured.

The silk design just referred to is for dress purposes, and



SILK BROCADE.

LIMITATIONS IMPOSED

its lightness makes it well adapted for use in that way ; such a treatment would be out of place if used for purposes like upholstery or hangings, in which a larger and more severe class of design is preferable.

Another important class of silk fabric is Brocatelle, a distinguishing feature of which is its raised figure, which is made to appear puffed out into slight relief above the ground. The facing of this puffed figure is satin, and it is usual to have very little ground in order that full advantage may be taken of the richness of effect which this satin gives. It is necessary in designing for brocatelle to avoid small details and choose forms of a bold and vigorous character, as it is impossible to obtain such details in the raised or puffed effect which is distinctive of this particular class of fabric ; if any small parts are introduced they must on no account be allowed to run into or confuse with each other.

In figured velvets the type of design which should be aimed at has much in common with brocatelle ; being a raised pile effect it is necessary to adopt clear and strongly marked forms, for small details (as, for instance, the small serrations of a leaf) would be very unsatisfactory in a fabric of this kind. It is always desirable to retain as much as possible of the velvet surface ; this is the richest part of the fabric, and it is natural, therefore, that as much of it as possible should be shown, sufficient ground only being used to bring out the ornamental forms that may be adopted. The upper example on PLATE LXVI. is a good instance of this, and it also illustrates a type of design which is well fitted for this class of work ; in this case the figure is entirely of cut velvet, but it is quite usual to allow some parts of a velvet pattern to remain uncut, that is, to show the uncut loops of the pile in any parts that the designer may think fit. A very usual practice is to let the forms of the pattern be outlined with an edging of this uncut pile,

ORNAMENTAL DESIGN

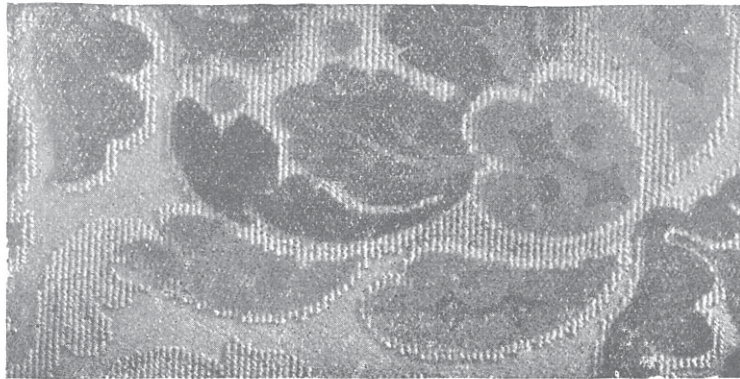
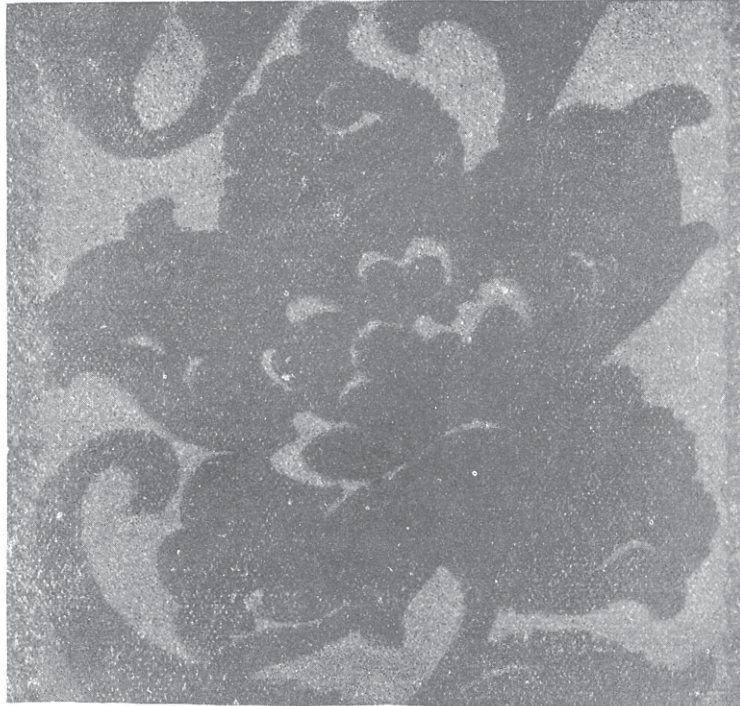
though it may be introduced in larger masses if the manufacturer is content to sacrifice a corresponding amount of the richer parts of the cut velvet; this is exemplified in the lower half of PLATE LXVI.

In Chenille fabrics the design is developed entirely from the weft, and is produced by dyeing the weft to correspond with each successive horizontal strip on the design paper, so that when the weft is thrown from the shuttle it will correspond on the fabric with the successive horizontal lines on the repeat of the design. This gives great scope for variety of colour, and almost any number of shades may be used. The yarn is a wool pile, and there are about eight ends of warp to the inch; it will be therefore evident that only designs of a large character could be satisfactorily worked out in this material.

In open textures such as lace curtains, Madras muslins, and gauze cloths, the light nature of the fabric and the necessity for the fabric being transparent and allowing light to pass through it, suggests design which is light and delicate; on the other hand the size of the net prevents very small details being satisfactorily shown: the ornamental forms used must therefore be bold, but at the same time the general effect of the whole must be as light in character as possible, and one very usual way of securing this lightness is by making good use of the principle of variety—that is, to get the heavier forms plentifully relieved by lighter and more delicate parts. In this way the value of the fabric as a transmitter of light will not be destroyed, and the ornamental treatment will be in harmony with the character and use of the material.

From what has been said in reference to the type of design suitable for various woven fabrics, it will be readily inferred that it is not always possible, and seldom advisable, to transfer a design from one material to another without thought as to the result of such an adaptation. A design

PLATE LXVI.



VELVET FIGURES.

LIMITATIONS IMPOSED

that is suitable for one material, however excellent the design may be in the original material, might become a very poor one when adapted to another ; a design in a fine material will not work in the case of coarser ones, and *vice versâ*, a design made for a coarse fabric would look bald and crude if put on to a fine silk.

Such adaptations can be and are made, but they must be made judiciously and altered to suit the changed requirements. The whole may be summed up in the statement that a design must be made with a full knowledge of how it will be executed in the fabric, and what kind of fabric it is intended for ; the designer must think, as it were, not in pencil and paper, but in warp and weft.

It is, of course, impossible here to deal with every class or textile that is produced, but the peculiar nature of the particular fabric for which a design is being made must be taken into account, and although certain limitations are thus necessarily imposed in each case, these limitations are not therefore hindrances to the production of good ornament ; on the contrary, the restrictions imposed will almost invariably act as a stimulant to the faculty of invention, and tend to develop ornamental forms that are not only beautiful and artistic, but are also consistent with the practical conditions which the fabric demands.

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