

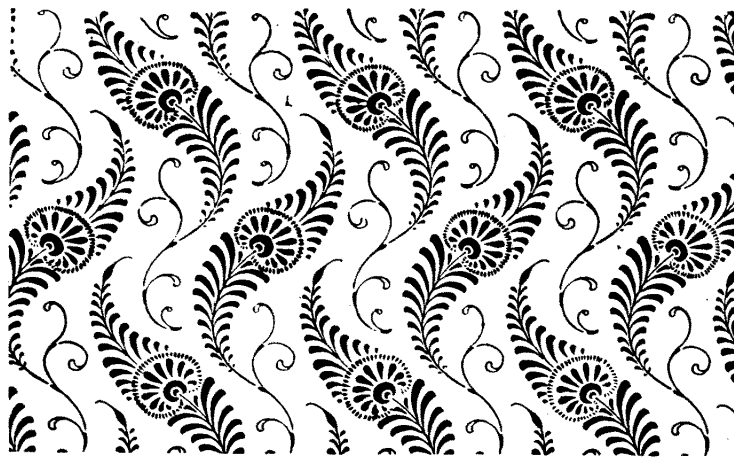


149. "TURNOVER" AND "DROP" PATTERN.

design as in the diagram opposite (150), but that does not constitute what is known as a *turnover repeat* unless it turns over on the same level.

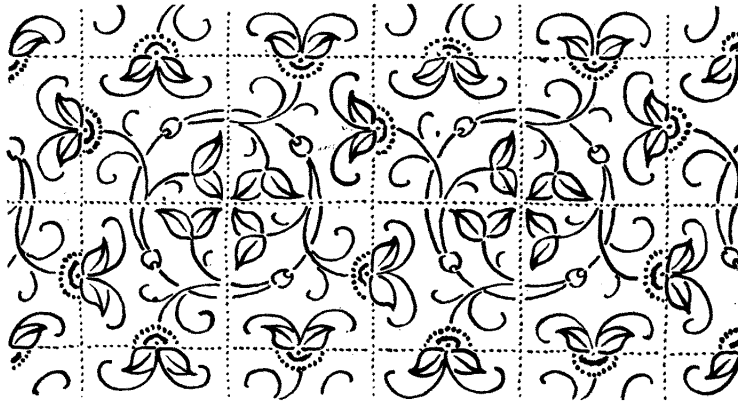
The "turnover" is nowhere more valuable than in border design. It is a most useful means of stopping the flow of the pattern, and of giving the lines *across*, which go so far towards the stability continually demanded in a border. Such lines may be expressed or understood: the counterpoise of parts suggests the axial line even when it is not put down.

A sprig or other pattern for wall decoration may just as easily be turned over as not. A stencil or a pounce



150. NOT A TURNOVER REPEAT.

has only to be turned face to the wall to give the design in reverse.



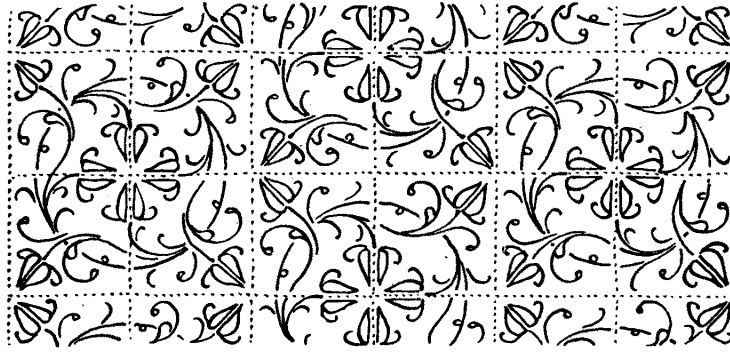
151. DIAGRAM SHOWING SQUARE REPEAT WHICH TURNS ROUND.

XII. THE TURN-ROUND.

Unit of design may be turned part way round—Unit of 6 by 6 inches results in repeat of 12 by 12 inches—Works either on the straight or as a drop—For radiating pattern a triangle half the size of smaller square suffices for unit—Fold and fold again—Arab lattice pattern dissected.

IN designing for tiles and such like the condition of continuity obvious in the case of woven pattern no longer exists, and possibilities occur which are denied to the weaver. The repeat of a 6 inch tile, or of the two or more 6 inch tiles which go to make the complete pattern, need no longer be always in the one direction. The designer is free to devise a unit which has to be turned completely round in repetition, or half-way round, or three-quarters of the way; he can, consequently, out of a 6 inch unit get a design which will not repeat on a straightforward trellis in less than four times its area.

In this way the repeats above (151), supposing them to be 12 inches square, could be got out of a unit only 6 inches



152. DIAGRAM SHOWING SQUARE REPEAT WHICH TURNS ROUND AND DROPS.

square, provided it could be turned round (as a tile could be) in the way above described.

In the case of a pattern repeating on horizontal lines, the design might extend (151) beyond the lines of the repeat. In the case of one that stepped (152), it would be necessary to keep within the four square lines.

If that were so, the pattern could without difficulty be schemed to work, not only as a drop, but on the straight also; and, as a matter of practice, many tile patterns are so designed.

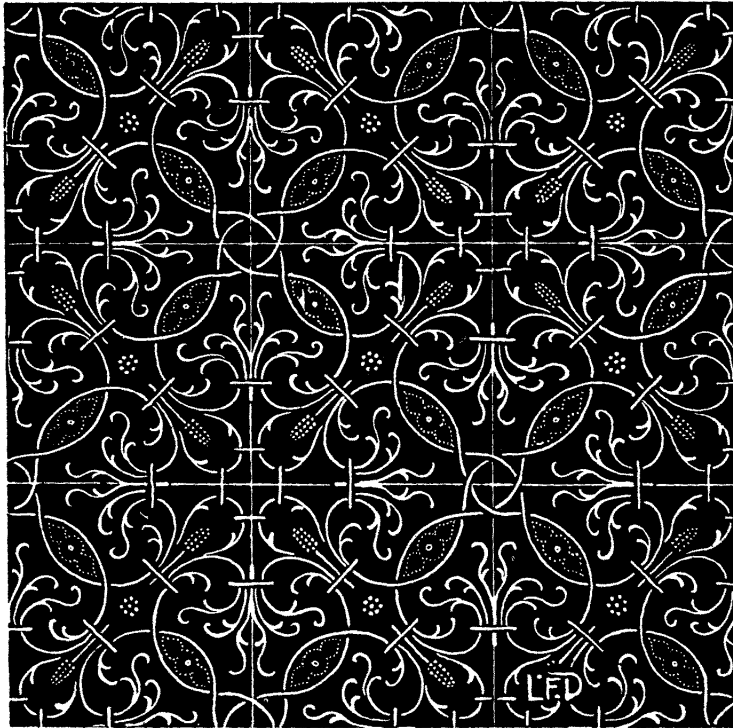
In a tile pattern such as that (153) overleaf, which radiates instead of following round, assuming the squares to measure 6 inches, and the pattern 12 inches across, the unit of repeat (except for the interlacing of the lines, which is no part of its construction) reduces itself to a triangle half the size of the square—or rather, that being itself a “turnover” again, to one a quarter of its size.

The building up of such a repeat on diamond lines is on the face of it apparent.

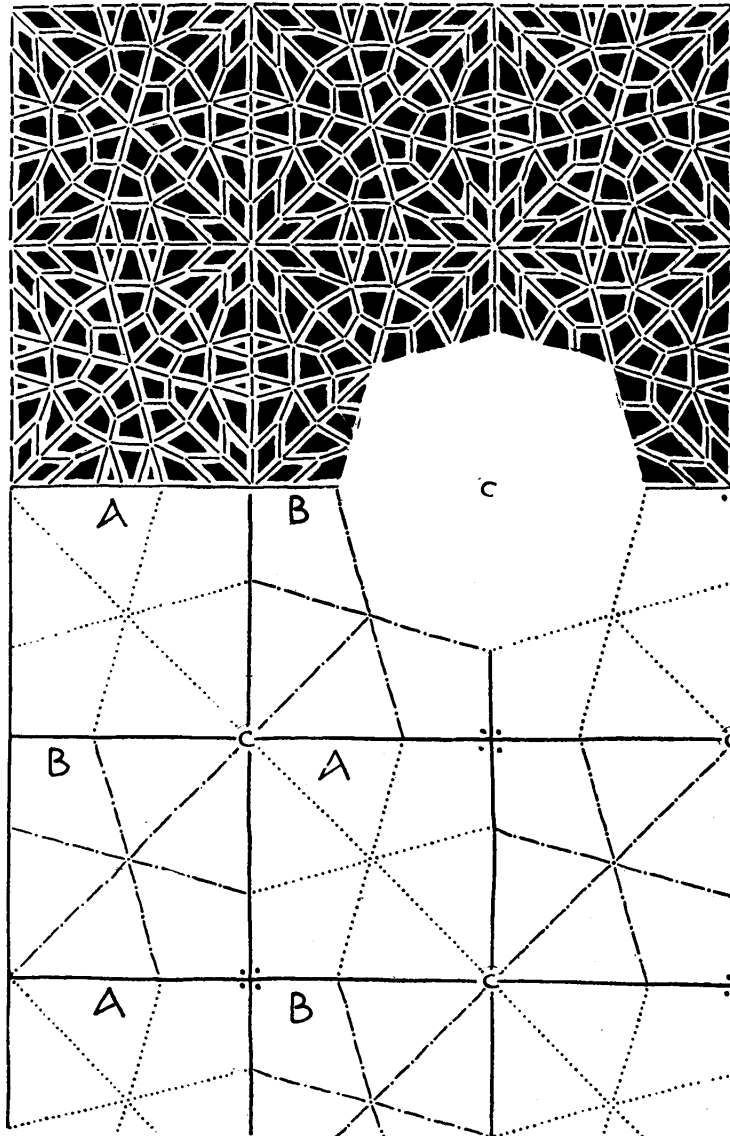
It is an Eastern practice (I have been told by Sir Caspar Purdon Clarke) to design on the lines of a sheet of paper folded in parallel lines, and folded again in lines at right angles to those, and then again in the diagonal direction—a

practice which one ought almost to have divined from the nature of the patterns resulting from it.

The Arab lattice opposite (154) is just such a pattern. Or it might be built (on the lines very similar to those shown in diagram 38) of octagons, the centre of which is marked C, and four pointed stars, of which the centre is marked by four dots ; or on the zig-zag lines which give those shapes. It repeats also on the lines of a rectangular diamond, the points of which occur at C ; or of a parallelogram A B which drops half its length ; and as A is only the reverse of B it works also as a turnover pattern. Further than that, B is actually



153. TURN-ROUND PATTERN.



154. ARAB LATTICE AND THE LINES INTO WHICH IT MAY BE RESOLVED.

the same unit as A, merely turned part way round until what in A was the top is in B the side of the square. The design would therefore work as a square tile of the dimensions of A.

Patterns of somewhat similar construction, even more plainly to be set out upon the lines given by folding and folding again, are shown on pages 50, 52, and 53, all of them typical Arab lattices.

XIII. PATTERN PLANNING IN RELATION TO TECHNIQUE.

Dimensions of design determined by conditions of manufacture—Possibilities in block printing—Limitations in weaving—Narrow repeat a condition of the loom—The “turnover”—A space of “single”—Borders—Table damask—The lengthening piece—Difficulties resulting—Conditions affecting colour—Change of shuttle—Its use and danger—Carpet weaving—“Planted” colours—Chenille—Characteristics of style accounted for by technique.

IT has been shown how the pattern designer is practically compelled to design, not precisely on square lines, but on the lines of a parallelogram. And not only that. The distance of the lines apart is almost certainly laid down for him. It is a parallelogram certainly of restricted size, and possibly of arbitrary proportions, with which he has to do. Without uniformity in the width of stuffs—silks, velvets, carpets, chintzes, or whatever they may be—it would be difficult to estimate off-hand their relative cost; and estimating is a matter of everyday necessity. Without stock sizes of tiles, the price by the yard, and the cost of fixing them, would not be easy to settle.

The width of stuffs is determined, if not by mechanism, by custom and convenience. The length of a woven pattern is restricted by considerations of economy, and that of a printed one by the girth of the roller, or the size of the block it is convenient to handle; so that in a vast number of cases a designer has to work within conditions which fix for him, not only the size, but the proportions, of his design. It

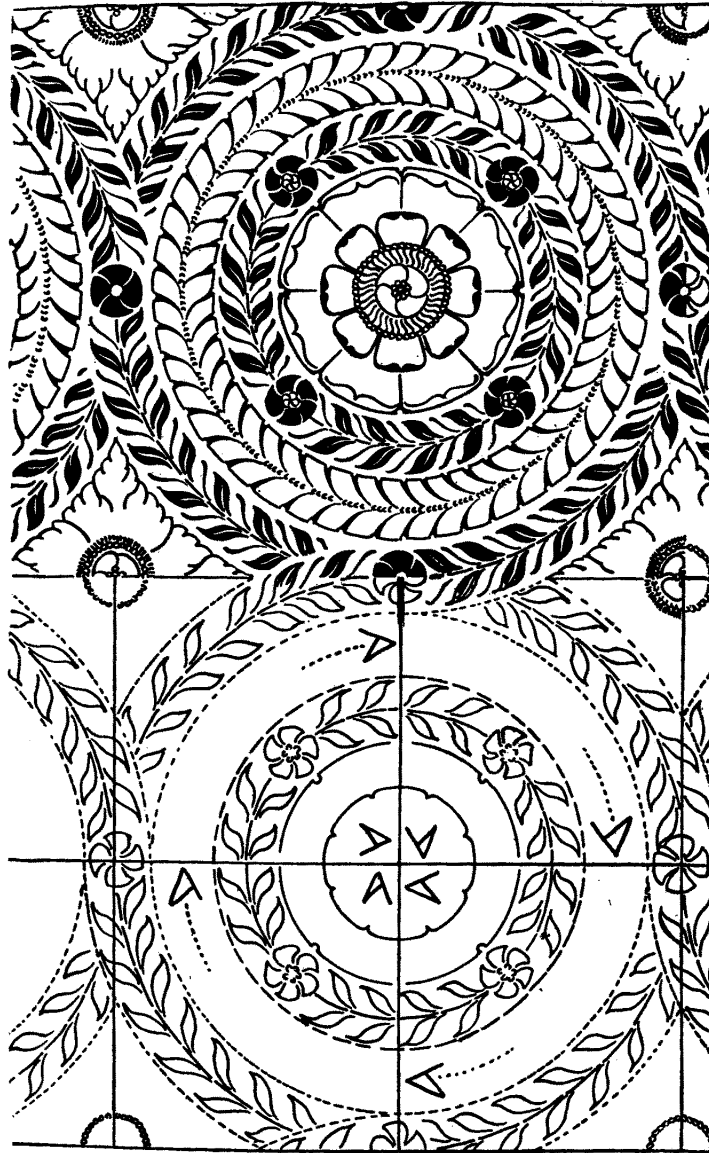
resolves itself into his working within the lines, say, of a parallelogram 30 by 15 inches for printed cotton ; or 21 by 21 inches (at most) for wall-paper ; for tiles, within a square mesh of lines 6 or 8 inches apart. And he is free only within such limits. Theoretically, it is true that a design for wall-paper may be spread over an area involving any number of blocks ; as a matter of fact, it is not. The designer is occasionally allowed in the case of sumptuous papers, and of certain single prints, a repeat of 42 inches long ; but patterns spread over a larger area than that would cost more to produce than paperhangings are usually worth. And, over and above the commercial consideration (which is in itself enough to prevent that kind of extravagance), it is a point of craftsmanship not to waste labour. It is the test of a designer's capacity that he should not ask for further facilities, but make the most of what the conditions offer him.

The mechanical conditions of block printing permit certain extensions of plan which roller printing does not. It is possible with a single block 21 by 21 inches to print either a radiating or a turning-round pattern which in the hanging shows a repeat measuring 42 inches each way.

Imagine the square lines in diagram 155 to be 21 inches apart. The unit contained in one of the divisions A stands for what the block will print. The printer has only after printing one impression (A) to give the block a twist round before printing the next (↵) to get the result shown at the bottom of the diagram, which represents also the width of the paper. As yet, however, we have only half a pattern. It remains with the paperhanger to set that right. He hangs every other strip as it were upside down (∇ ↵) and the complete pattern results on the wall.

The design given on a smaller scale on page 134, in which also the repeat is actually 42 inches across, is got out of a single (21 inch) block in the same way.

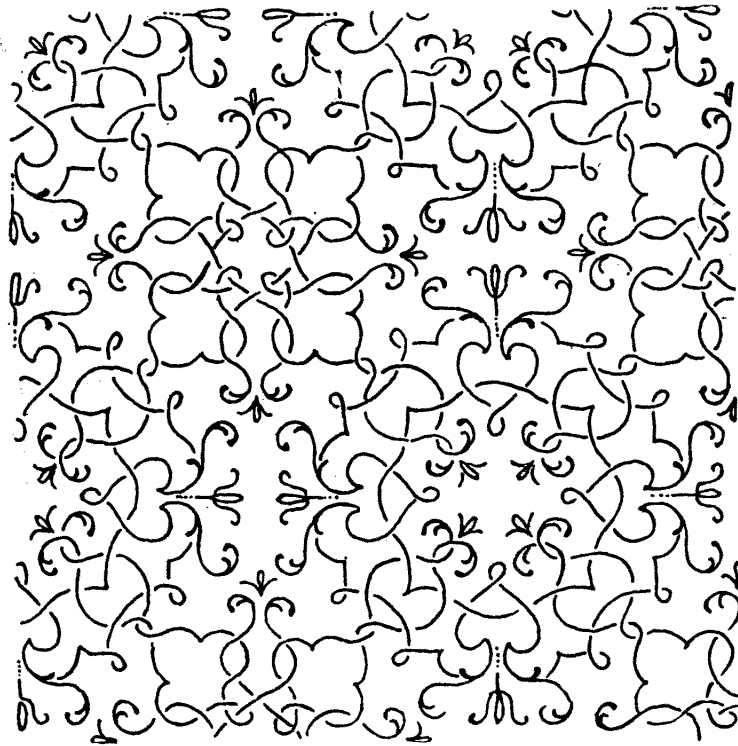
Further it is possible by means of two 21 inch blocks to



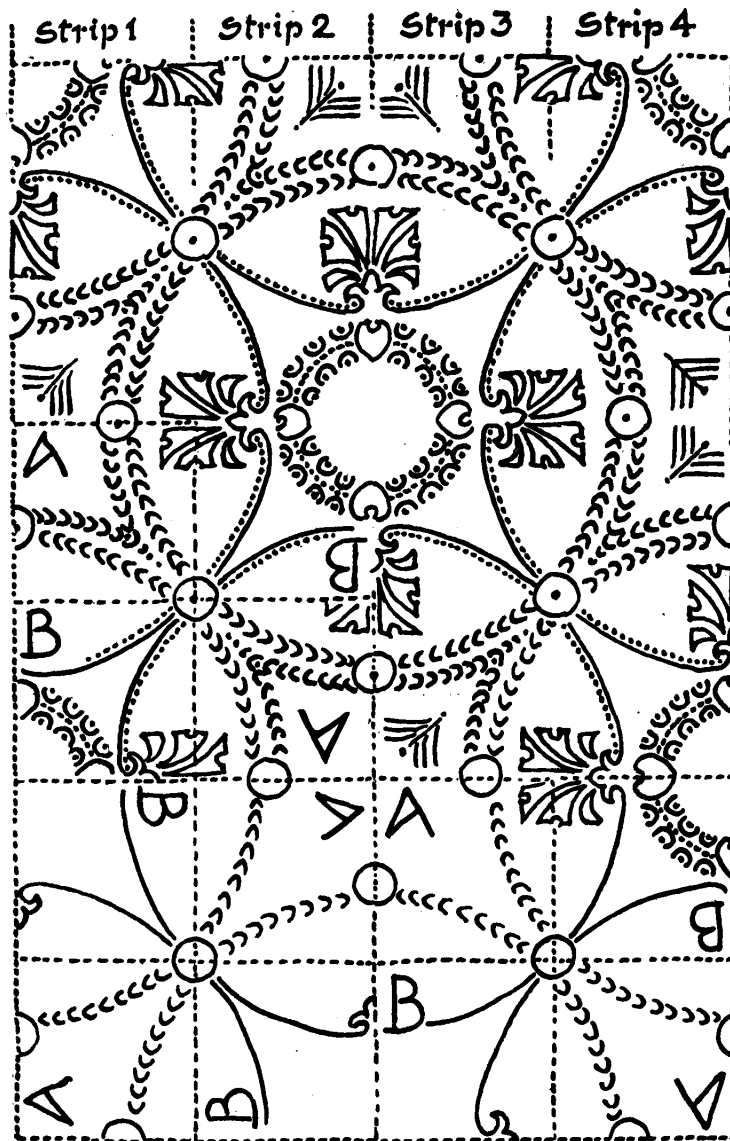
155. DIAGRAM TO SHOW A HALF TURN OF THE BLOCK IN PRINTING A CEILING PAPER, AND THE REVERSAL OF ALTERNATE STRIPS IN THE HANGING.

print a pattern of which the repeat works on a rectangular diamond measuring 84 inches from point to point. In this case, however, the design must radiate, and not turn round—or, when the alternate strips came to be hung (as to complete the pattern they would need to be) opposite ways about, the design would not run on.

The diagram opposite (157) shows four widths of paper. In the strip to the left A and B represent the prints from the two 21 inch blocks, ∞ and \triangleleft prints from the same blocks twisted round. In the second strip $\infty \vee \triangleleft$, a strip precisely



156. DIAGRAM OF CEILING PATTERN (IN EFFECT, 42 INCHES ACROSS) ON THE PRINCIPLE OF DIAGRAM 155.



157. DIAGRAM SHOWING A PATTERN IN EFFECT 84 INCHES WIDE
 PRODUCED BY 2 BLOCKS EACH ONLY 21 INCHES BY 21 INCHES.

similar to $AB \approx \triangleleft$ upside down, the hanging is so schemed that g is on a level with A and v with B . The third strip is hung the same way up as the first, but so as to drop 42 inches below that. The fourth strip is again the same way up as the second, but so as to drop 42 inches below that.

All this would be difficult to follow in print, but for the diagram. With that to refer to, it is easy enough.

Patterns of this character are not wanted in wall decoration ; but for ceilings they give not only a sufficient scale, but just the lines which are most serviceable.

These devices by no means exhaust the possibilities in the way of cunning contrivance. But the block printer does not look kindly on designs which ask of him a little extra care—and as for the paperhanger, he is persuaded that the use of his brains is no part of his business. Indeed that scheme last explained is already too intricate to have been put into practice, which it might easily have been if only the paper-stainer could have depended upon the goodwill of the paperhanger.

The designer of wall tiling has every reason for scheming his repeat to work on the brick system (158).

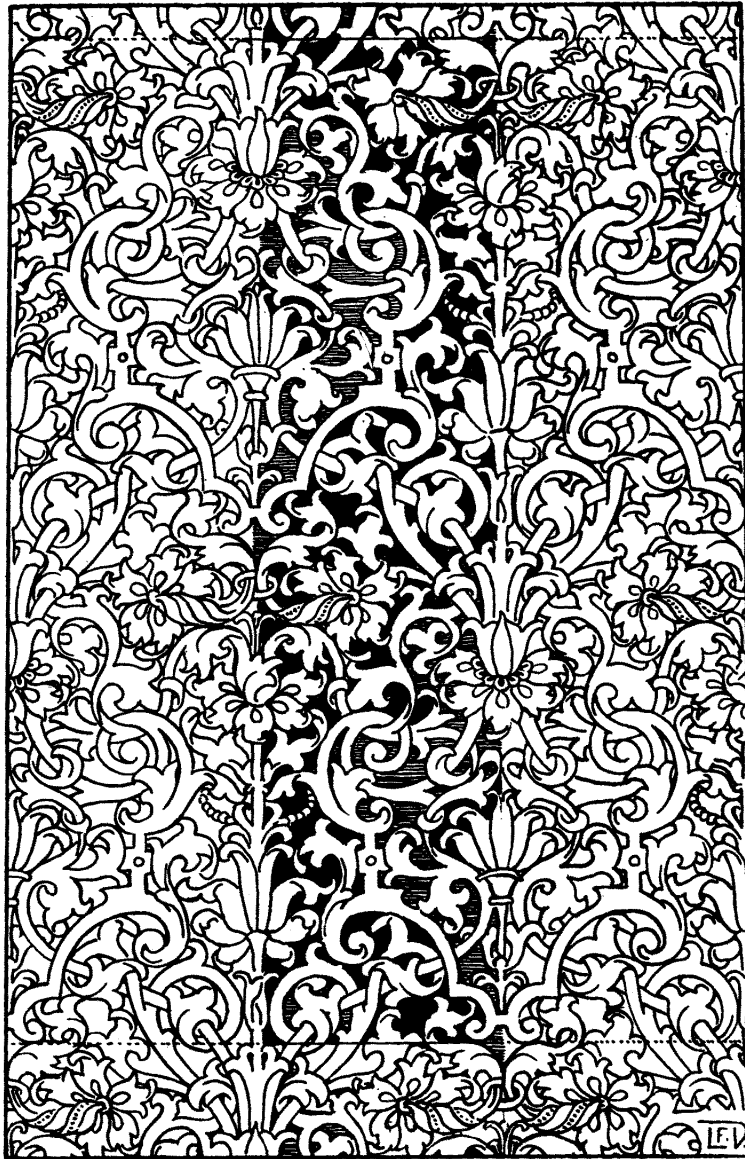
The material for which a man is designing settles, in a measure at least, both the dimension and the proportions of his pattern. Thus, for a printed fabric the roller commonly allows him an area twice as wide as it is deep. For wall-paper the block allows him at the most a square of definite dimensions, except that he may on occasion be free to use two blocks. For a woven fabric the loom gives him a considerable length of pattern not greatly restricted by expense, but usually only a narrow width, precisely fixed according to the loom, and affords him very likely the opportunity of doubling the width of his design by turning it over. So uniformly are these conditions so, that an experienced designer can often tell, from the proportions and scale of a design, the kind of manufacture for which it was made. The copyist, on the



158. SIX-INCH TILE DESIGNED TO BE FIXED BRICKWISE.

other hand, who finds a pattern which has apparently been overlooked, and thinks to appropriate it to his own use, discovers perhaps, before he has done with it, that there was good reason why it had not already been annexed—inasmuch as it depends upon proportions which the machine, to the requirements of which he desires to adapt it, will not permit him to preserve. Even among a designer's own happiest thoughts there will be some which (if he works only in one material) must, for much the same reason, be stillborn. A new set of conditions start a man off in quite a new vein.

In the design on page 138 the width of the material is



159. NARROW TURNOVER PATTERN ADAPTED TO WEAVING.

indicated in the central strip, where the background is filled in. If that were wall-paper, 21 inches wide, it would take no less than four full-sized blocks to print it—which would not be worth while. If it were a woven stuff, the long repeat, though adding to the expense of production, would not be very much against it. As a matter of fact patterns of that relative length often occur in textiles. The one on this page is again a turnover (160).

The narrow pattern overleaf (161) is a wall-paper design which is only 10½ inches wide. In wall-paper printing there is no economy in this as there would be in cotton printing—but artistically there may be very good reasons for using sometimes only half the width the block allows.

The weaver adopts the long and narrow repeat all the more readily that he has a handy means of counteracting its too upright tendency. The cross stripes which form the pattern of an Indian durrie or an African blanket represent the handloom weaver's simplest means of changing colour—that is, by changing his shuttle. In more elaborate pattern he has the same facility, and can always cross his upright strips by bands of colour carrying the eye in the other direction. And this scheme of banding extends through much of the early weaving, affecting also the form of the design.



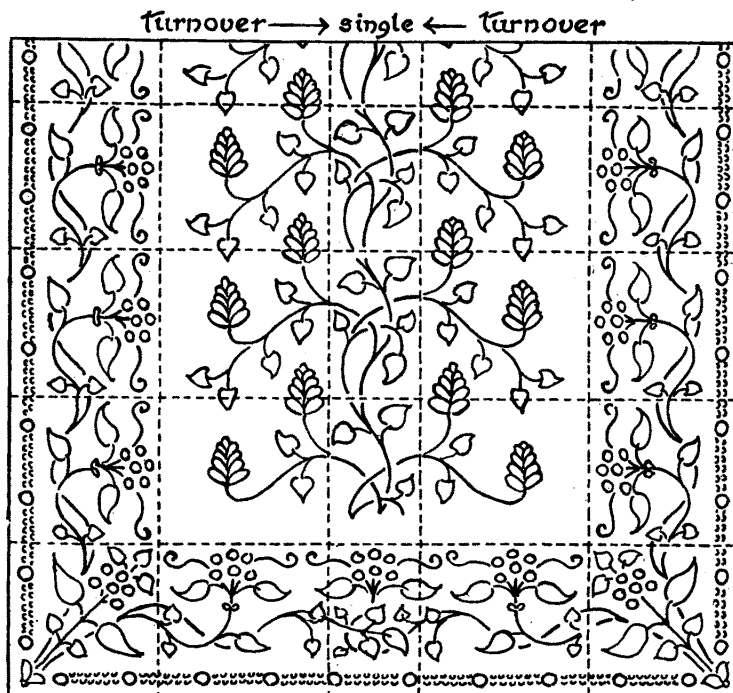
160. NARROW WOVEN
DAMASK PATTERN.



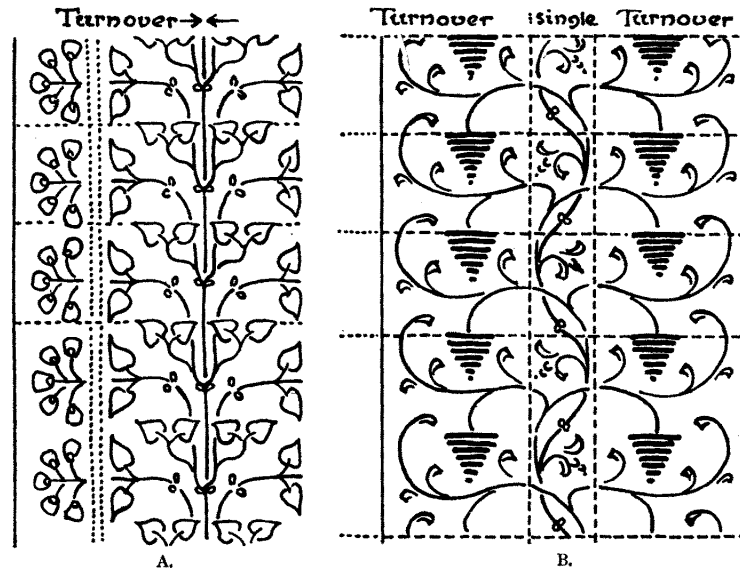
161. WALL-PAPER PATTERN $10\frac{1}{2}$ INCHES WIDE BY WHICH NO ECONOMY IS EFFECTED.

A Byzantine or Sicilian weaver of old was the more inclined to make use of the horizontal lines suggested by the shuttle, because he had no fear of their asserting themselves. In fact he was in the habit of insisting upon them, for he valued the stripe as a means of marking the folds and showing the fulness of a hanging. They do that so effectually that a flat wall-design in horizontal stripes seems to want folds, and to suggest that it was borrowed from a textile. Many a pattern borrowed from an old stuff—by its stripes you shall know it—is far from satisfactory as a wall-paper.

The proportions allowed for the repeat naturally affect the character of the design. You cannot without considerable allowance in the way of length indulge in boldly flowing



162. DIAGRAM OF WOVEN PATTERN, "TURNOVER" AND "SINGLE."



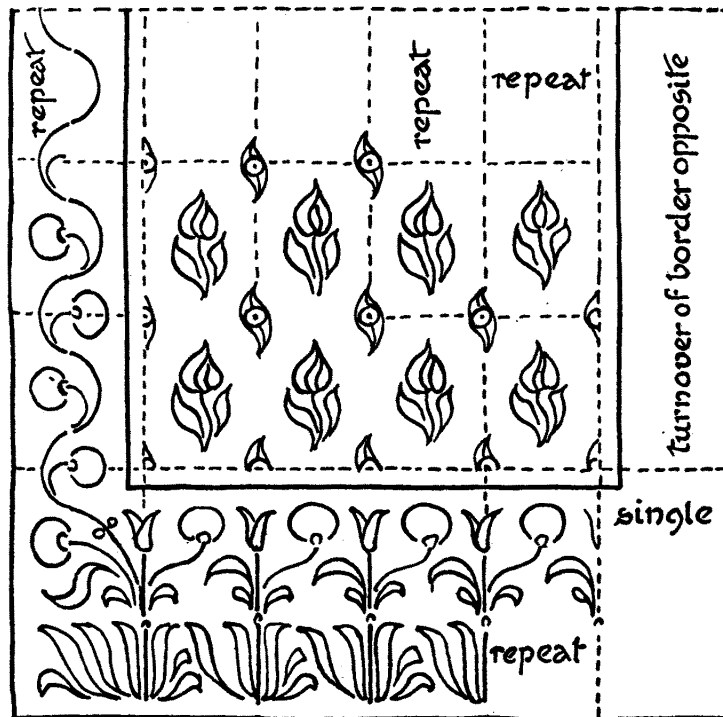
163. DIAGRAMS SHOWING CORRESPONDENCE IN DEPTH OF REPEAT BETWEEN THE PARTS OF A DESIGN.

scrollwork ; nor, where the width is narrow, avoid a certain upright tendency in the growth of pattern—counteract it as you may by cross bands.

The weaver's custom of reserving in the centre of a turnover pattern a space in which the design is not reversed has been already mentioned (page 120). By that means the stiffness of a definite upright line, the formality of mere reversal, and the obtrusiveness of what is after all a mechanical device, are avoided. A loom may be so harnessed, and commonly is so harnessed (162), as to allow the designer a space up the centre of his curtain (or of the repeat of it) in which he is free to do as he pleases so long as this central part of his design joins on at the sides to the two broad wings which make up the main portion of his design. The same thing applies equally to the design of a border. In diagram 162 the border on one side is a turnover of that on the other ; but

the turnover might equally well be within the border itself. Filling and border pattern, that is to say, may alike be turned over; and in each may be reserved a central strip of what is technically termed "single." The width of that portion of the design is a question of arrangement and partly of cost. An important consideration to be borne in mind is that the introduction of any proportion of single design is at the cost of possible increase in width.

The device of turning over gives one, for example, double the width otherwise allowed say for a border. Instead of a "free" pattern 9 inches wide it allows a bisymmetrical one of



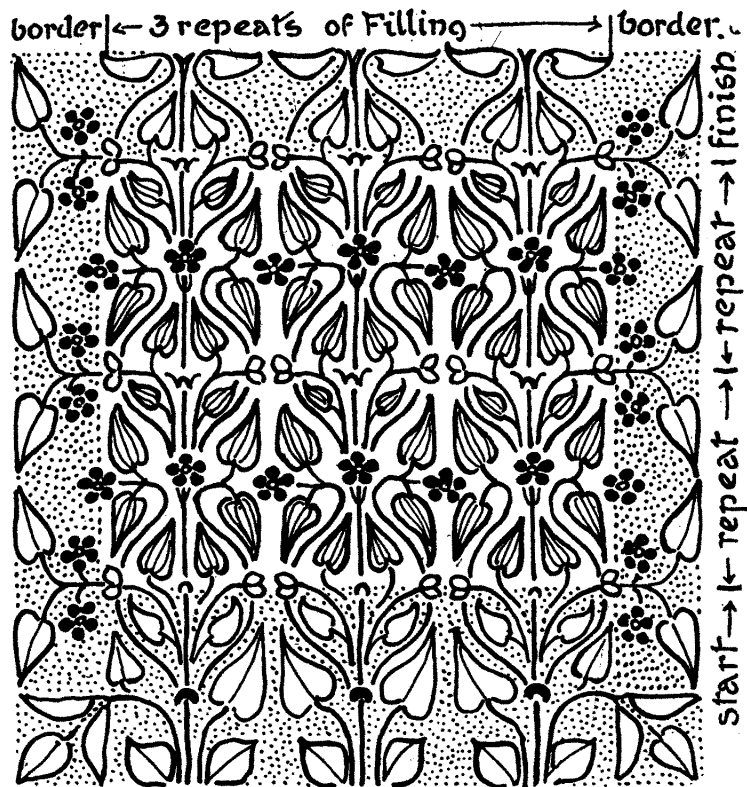
164. DIAGRAM SHOWING RELATION OF DIAPER REPEAT TO REPEAT OF SIDE AND BOTTOM BORDERS.

18 inches. But it is only so much of the width as is turned over that is doubled. If, then, you reserve let us say 3 inches in the centre for "single," the extent of your border would not be 18 inches but 15—the sum that is to say of 3 inches (single) and twice 6 inches (turned over). The technique of weaving has here, it will be seen, considerable bearing not merely upon design but upon its plan.

Single and turnover portions of a design must naturally correspond in length. They need not of necessity be equal as at A (163), but it is practically convenient to make them so. The design B could of course be woven; but, if the repeat of the turnover measured 9 inches, a manufacturer would not allow 18 inches for the single. In the same way the repeat of a border must naturally correspond at the side of a curtain with the depth of a filling pattern, and at the bottom with its width (162, 164)—and if part of the filling is single, the corresponding portion of the border also may be.

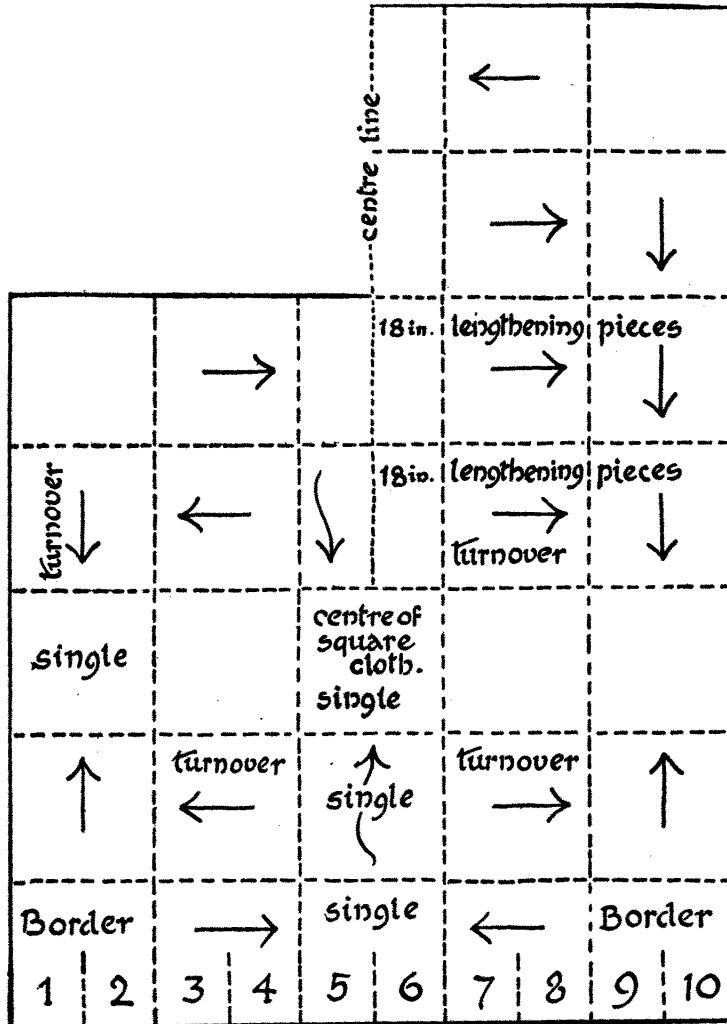
In the case of a narrow and not very important border it may be shorter than the filling as long as its length is divisible into that—a 9-inch filling may have a border of $4\frac{1}{2}$ inches, or 3 inches, or $1\frac{1}{2}$. And so where the border is the main feature and the filling a mere diaper (164), that may measure only half or a third or a quarter of its length. And were it mechanically possible to weave border and filling the repeats of which measured respectively say 7 and 9 inches, it is doubtful if artistically it would be worth while: the simple thing to do is commonly the right one. It is sometimes desirable to make a curtain or other pattern complete in itself with start and finish (165). For working purposes these may be regarded as borders, and must conform to the conditions regulating border design.

Further complexities occur in the design of table linen. The conditions seem at first sight to allow great freedom to the artist. He has only to design a square or oblong cloth each quarter of which is a turnover of the other, and in the

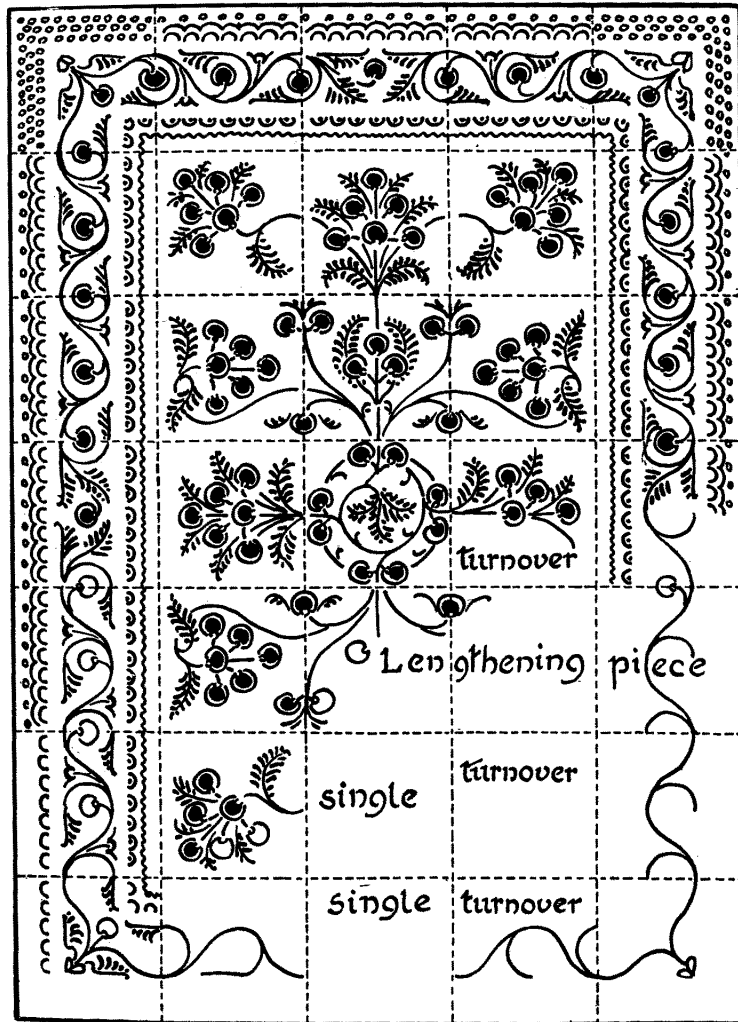


165. DIAGRAM SHOWING PORTIONS OF DESIGN ANSWERING PRACTICALLY TO BORDERS.

centre he may have a space where there is no repeat. That is charming in theory. In practice his task is not so simple. It is complicated by the necessity of arranging some means of lengthening the cloth to suit tables of various dimensions. And it resolves itself into his having to design a lengthening piece (usually of 9 or 18 inches) which must be so schemed that it can be inserted once, twice, thrice, or any number of times, to make a cloth of any length. The scope which the manufacturer gives with one hand he thus takes back with the



166. DIAGRAM SHOWING HOW A TABLE DAMASK DESIGN MAY BE PLANNED.



167. DIAGRAM OF TABLE DAMASK DESIGN PLANNED ON THE LINES OF DIAGRAM 166.

other. To such an extent is his freedom restricted that the artist is inclined at first to think his possibilities are narrowed to little more than the extension and finishing off of the design for a lengthening piece.

Where it is not desired in any way to acknowledge the centre of the cloth the problem may be resolved into the design of an 18-inch repeat (reversed or not in the centre) merely finished off at the edges or cut short by the border.

Where it is desired to give importance to the centre of the cloth the loom can be arranged so that there is no turning over there; but if the end portions are turned over it is difficult to scheme a growing pattern in which the stems do not grow two ways. Again if the artist is disposed to take advantage of the area allowed him to get good sweeping lines in his main design, his ardour is damped by the reflection that he must somehow combine them with the comparatively restrained lines which are all that is possible in the lengthening piece. This affects the border in particular very seriously. Try to introduce into a sweeping scroll design a yard long a lengthening piece of half a yard, and you will realise the impossibility of it.

Counsels of safety are: to confine oneself in the main design to lines such as can be repeated in the lengthening piece: to allot spaces at least in the design to sprigs, sprays, or disconnected diaper: to avoid, like the Arabs or their imitators of the Renaissance, growth so natural as to be hurt when it is suddenly doubled back or made to grow two ways. To take full advantage of the apparent opportunity of design afforded by the dimensions of an ample tablecloth, and at the same time to preserve something like logical growth, is what any but an experienced damask designer will find it difficult to do.

The accompanying diagrams (166, 167) may be of use to the beginner. The first of these is divided, it will be seen, into ten divisions each measuring 9 inches (tablecloths are always measured by quarter yards), two of which are given to the

border and two to the single piece up the centre, which leaves two for the turnover piece between.

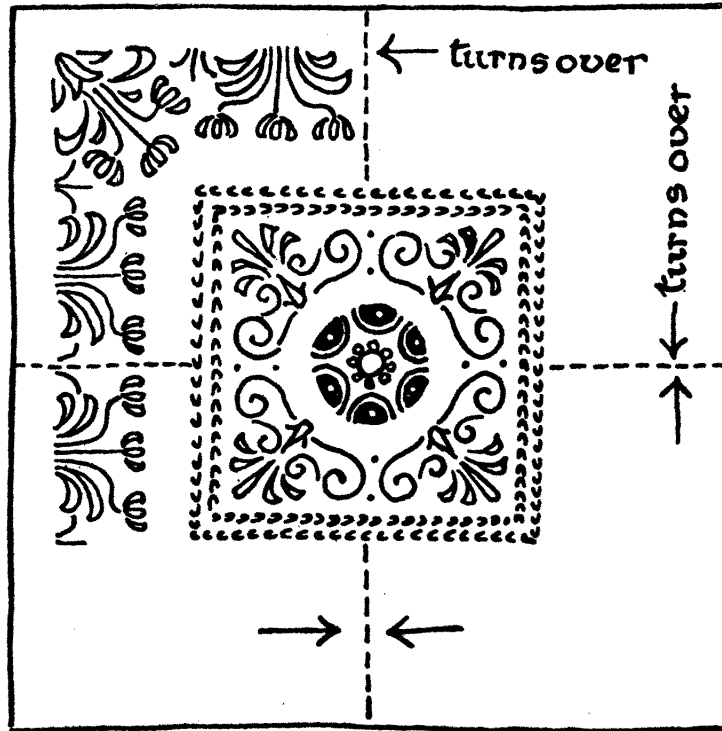
The plan shows three quarters of a square "ten-quarter" cloth (a smaller size is "eight-quarter"), and, above, to the right, one quarter of a cloth into which two lengthening pieces are introduced.

The corresponding diagram (167) shows the beginnings of a pattern planned on similar lines, but with the two lengthening pieces inserted, one above and one below the centre.

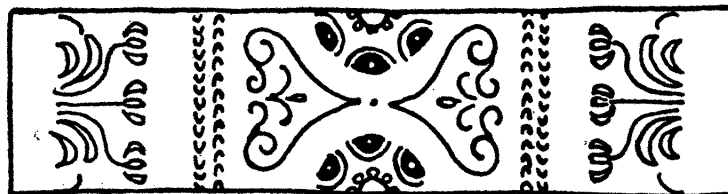
An 18-inch border practically represents that portion of the cloth which may be presumed to fall over, and the central six quarters the portion which will lie flat on the table. Any extra border within that space is reckoned as part of the filling; any part of the filling which extends beyond the six-quarter area is reckoned as border. The lengthening piece or pieces need not be introduced as shown in the diagrams above; they may come in the centre of the cloth.

The plan more usually adopted by damask designers is to halve the design, open it out, and let in the lengthening pieces. Diagram 168 (overleaf) represents a square which might stand either for an eight-quarter cloth or the centre portion of a larger one. Below it (169) is the lengthening piece, and opposite (170) the result of opening out the square and letting in two lengthening pieces.

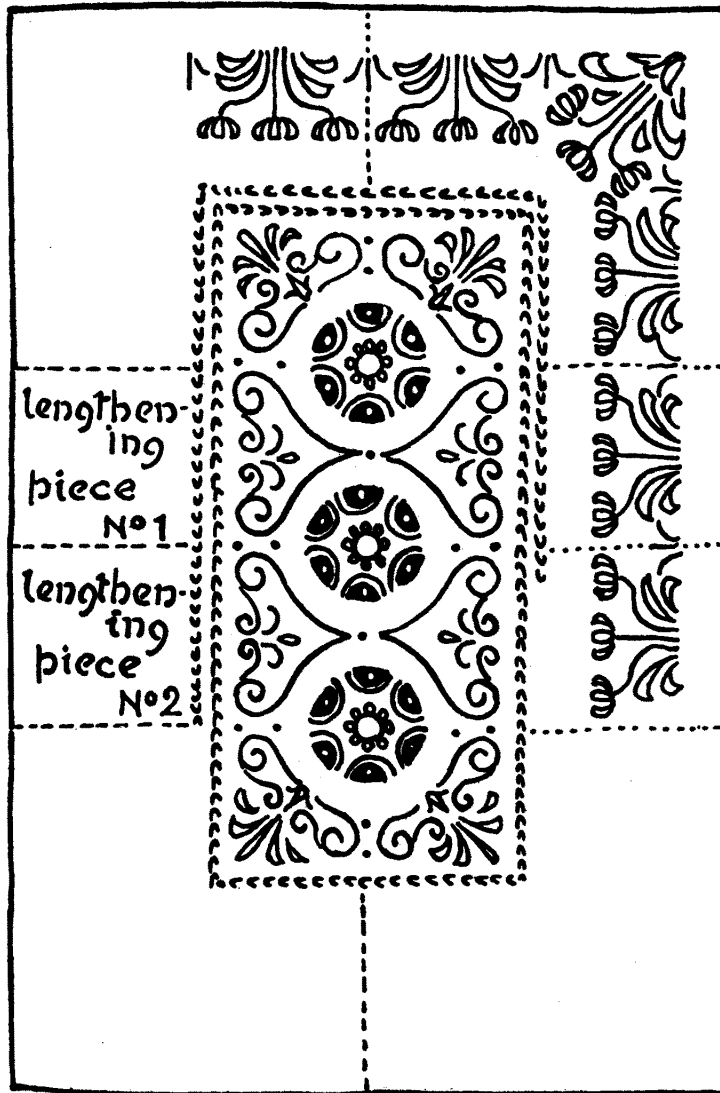
The changing of the weaver's shuttle, responsible for the stripes in a durrie, gives scope to the designer of more sumptuous and less simple fabrics. There can be no more colours in a stuff than there are threads of different colour in its make. But each group of threads may be brought to the surface at the option of the designer—and, if for any group or groups of threads he prefers to use instead of a single colour alternating bands of different colours, he can do so—and if these particular colours do not come often to the surface, he can get as it were jewells of extra colour without calling attention to its occurrence in bands—but



168. DIAGRAM OF CENTRE PART OF SQUARE TABLECLOTH.



169. DIAGRAM OF LENGTHENING PIECE TO CORRESPOND WITH ABOVE.



170. DIAGRAM OF CENTRE PART OF LONG TABLECLOTH SHOWING INTRODUCTION OF LENGTHENING PIECES.

it takes some ingenuity to do that. The stripes have a persistent way of asserting themselves. Successfully to divert attention from the mechanism underlying such a distribution of colour is within the scope only of an expert designer. His task is easier if he is free to gradate the various colours so that they die one into another or into the ground; but even with flat colours a man who knows his trade can effectively disguise the means employed to variety.

The kind of variation possible is illustrated in diagram 171, where the strawberry blossoms are successively of three different tints, indicated in black, in dots, and in diagonal lines, and the changes of the shuttle are very plainly shown in the bands at the side which may represent the selvidge.

What one weaver does with the weft another does with the warp. The carpet designer, working for a material of which the warp comes always to the surface, does by the arrangement of his warp threads in bands what another weaver does by changing the shuttle. In a "five-frame" carpet five series of warp threads are brought to the surface and give a design in five colours, but if in one of them (or it may be two or even three "frames") the threads instead of being all of one colour are arranged as it were in ribbons of different colours, these various colours can just as easily be brought to the surface as threads all of one colour.

According to the number of stripes in which the threads of a "frame" are arranged is the number of the colours to be got out of it. But, as in the case of the changing shuttle only the colour of that one shuttle could possibly occur in the line across which it was shot, so in the case of the warp threads no one colour in a given frame can cross the path of another—it occurs only in the line of the underlying stripe.

Diagram 172 shows one frame of the warp divided into six stripes which give only three colours. They might just as easily have been six, and they might each of them have been gradated from light to dark or from warm to cold. That

would have made with the other four frames ten colours in all —as it is we have seven, only four of which the artist is free to use as he will.

There is no real difficulty in scheming a pattern to meet such conditions as these. And even in the more complicated case where two frames or more are thus divided into stripes all that the designer has to do is to make sure that his “planted” colours, to use the trade term, do not exceed their



171. DIAGRAM SHOWING CHANGE OF COLOUR IN THE WEFT THREADS.

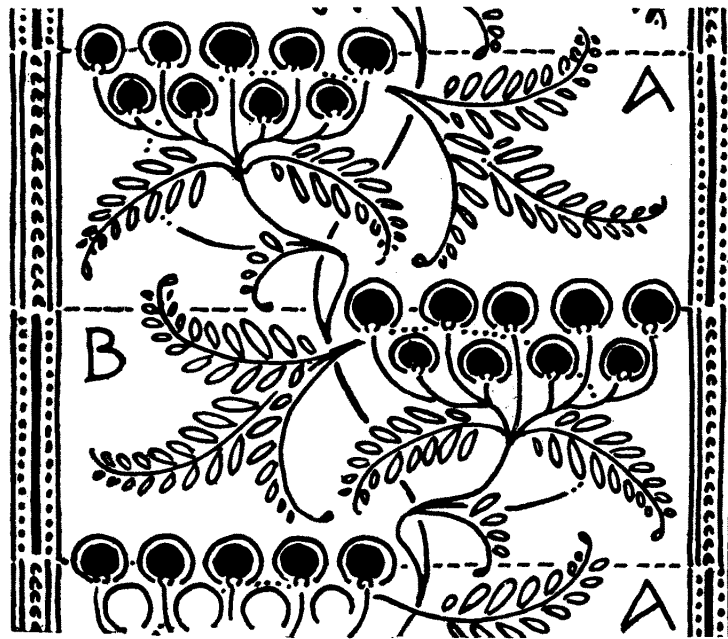


172. DIAGRAM SHOWING CHANGE OF COLOUR IN WARP THREADS.

bounds. This he can easily do either by ruling guide lines on his drawing or by the use of a strip of paper painted with each colour in its order and proportion which he can move about as a gauge. With a clear head he should have no great difficulty in keeping one colour out of the way of another.

He is not always careful to make his details correspond precisely with the colour stripe, and by the occasional overlapping of the form by a colour not apparently belonging to it, or *vice versa*, the appearance of abrupt transition is avoided. It looks as if mistakes in gauging had resulted occasionally in happy effects of confusion, and that the device had since been employed deliberately.

It will be seen (172) that it is mainly in the flower centres that the planted colours are used—the mass of the flower itself carries the eye far beyond the spots of colour, which might otherwise run into stripes. The idea is, of course, that in the confusion of flower, leaf, ground, and outline colours, the order of these jewels of bright colour shall not be too apparent.



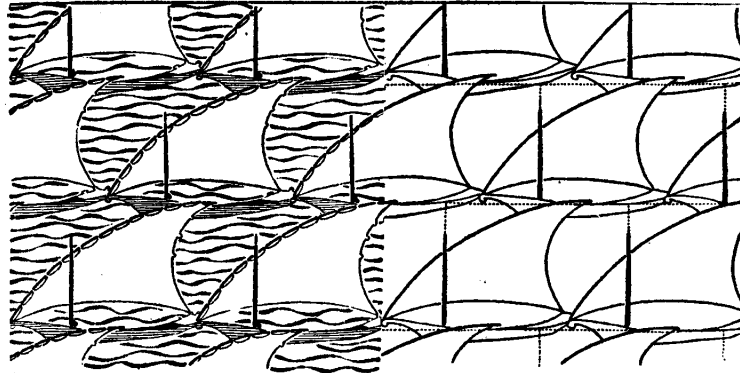
173. DIAGRAM SHOWING REVERSAL OF DESIGN IN CHENILLE WEAVING.

In the diagram they are purposely insisted upon, and the foliage is barely indicated. In the woven fabric the form of the pronounced foliage would help very much to give that mystery of effect which is at times so valuable. The complicated mechanism necessary to the frequent changing of the shuttle in powerloom weaving leads in many modern fabrics to the use of a number of warps, any one of which can be brought to the surface wherever the colour of it enters into the design. If yet more colours are wanted, they may as already explained (page 152) be "planted." Each additional warp adds naturally to the heaviness of the stuff.

A very exceptional facility is afforded by the process of chenille weaving. The design may extend right across the curtain—and the repeats need not follow one above the other in the usual way. Each alternate one may, if it is desired, be reversed. The repeat of the design (173) on page 155 would in the ordinary way include two groups of flowers (A, B), and there would be no economy in making one the reverse of the other; but in chenille weaving there would; and the repeat is comprised in the unit A, of which B is the reverse.

The characteristic lines of time-honoured patterns are for the most part the direct result of the restrictions under which the designer was working. Fashion has had her say in the matter no doubt—it is a wicked way she has—but, though certain lines of design may have become associated in our minds with a particular period or country, it will be found, I think, that there was always some technical or practical reason why in the first instance they were adopted. Appropriate pattern lines do not come of themselves—growth and fitness go together.

Pattern design has always been and will always be considerably affected by considerations which never occur to the uninitiated.



174. WOULD-BE FREE PATTERN FALLING INTO THE LINES OF THE BRICK REPEAT.

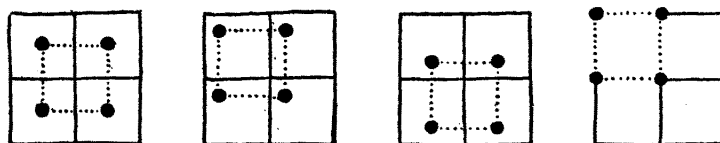
XIV. HOW TO SET ABOUT DESIGN.

Free patterns planned on formal lines—Features recur at intervals determined by unit of repeat—Planning the only way to avoid unforeseen effects—Means of disguising formal lines—Necessity for system—Genesis of counterchange border—of geometric diaper—How not to do it—Detail not to be determined too soon—Genesis of conventional floral pattern starting with the masses—of a drop pattern—of a pattern starting with line—of a floral pattern starting with distribution of flowers—of a velvet pattern starting with severe lines—“Inhabited” pattern—Evolution of Italian arabesque pilaster—Animal form in pattern—Starting at a venture—and from an idea—Afterthoughts.

GEOMETRIC patterns have as a rule much less reticence in exposing the lines of their construction than others. You see more plainly in them the various plans of construction upon which such stress has been laid. The freest and loosest of patterns will be found, however, to repeat as geometrically as the severest, and on precisely the same lines: it is for that reason so much stress has been laid upon geometry. A flowing pattern does not flow so freely as might be supposed. Mark any recurrent feature in it—and four such features will give you points from which may be drawn the four straight

lines which mark the square, or parallelogram, or diamond upon which the repeat works. It may be doubted whether the quasi-pictorial French wall-paper (174) on page 157 was planned upon the lines of the brick,* but it falls into them, and the masts of the ships practically give the vertical divisions of the plan.

Each and every feature in a design recurs at intervals determined by the proportions of its unit. Let your unit be a square, for example (175), and, in a cluster of four squares, any given detail will mark by its recurrence the proportion of the square, no matter whereabouts in the square it may occur. The diagrams below show this.



175. DIAGRAM SHOWING HOW RECURRING FEATURE MARKS THE PLAN OF A PATTERN.

The recurrence of the details of the pattern is a certainty. It is as well to make certain of the sequence in which they shall recur. Any reliance upon haphazard at the beginning is sure to give trouble in the end. Happy-go-lucky arrangements seldom work out happily; there is no reason why they should.

A painter may, and often does, go jauntily about his work and put in a diaper upon a screen behind his figures without taking the pains to plan it; but the further he goes the wider he gets of accuracy, and the more plainly his carelessness is revealed. In the diaper opposite (176), for example, the "repeat" does not repeat. This matters nothing in a painting. It even gives the painter an opportunity of adapting the pattern to his pictorial needs. In a design for practical purposes it would matter everything. It

* See page 71.

would be in fact not a design but only a suggestion for one.

A designer, like other artists, trusts largely to his instinct; and rightly relies upon it for artistic prompting throughout his work; but it will not supply the place of order, to which in the nature of things he is pledged. He is free *only within the limits of his repeat*—practically a right-angled space, or a diamond of given dimensions.

Suppose it to be a square. Within the four sides of that he may do as he likes. He may sprinkle sprigs about in the most admired disorder. There may be no more geometric relation between them than between the six black spots in the central square overleaf (177); but, where there is no geometric relation between the members of the group, it is not easy to anticipate, as a designer should, what will be the effect of the group itself when it comes to be repeated. It will be seen that in repetition the spots fall into irregular lines with awkward gaps between—just the kind of line which comes by accident, and might easily have been avoided by careful contrivance (comp. page 5).

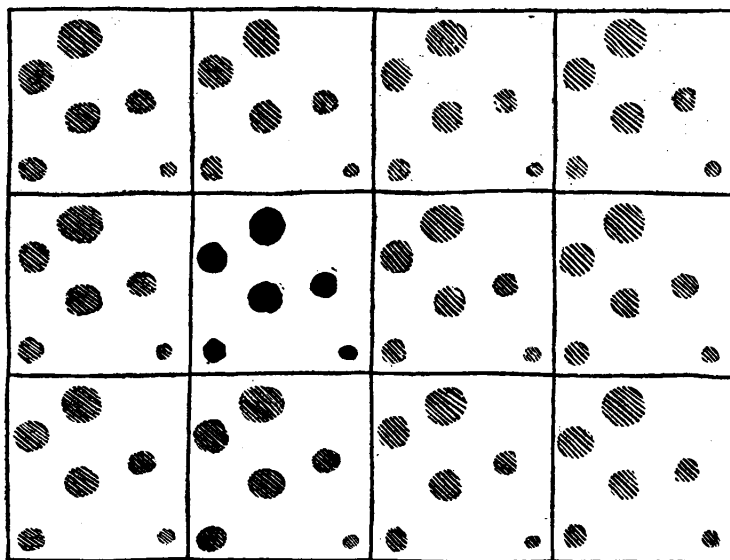
For want of more systematic planning the pretty damask



176. PAINTED GOTHIC DIAPER IN WHICH THE "REPEAT" DOES NOT WORK.

pattern opposite (178) falls into stripes which, it seems to me, the artist did not foresee. They are comparatively harmless there—and would be equally so in a table damask—but in a wall pattern, for example, they might assume distressing prominence.

A stripe is by no means necessarily to be avoided in design—and it is in obedience rather to the prejudices of a timid public than to their own artistic instinct, that designers avoid frank lines. Artists know how useful they are. But they should be the lines that play their part in the pattern; and, to do that, they must be well considered; not left to chance: the chances are all against a happy fluke. One way out of the difficulty is boldly to insist upon the stripe and make a feature of it. Another is to cover the ground with uniform pattern in which is no break and no feature more



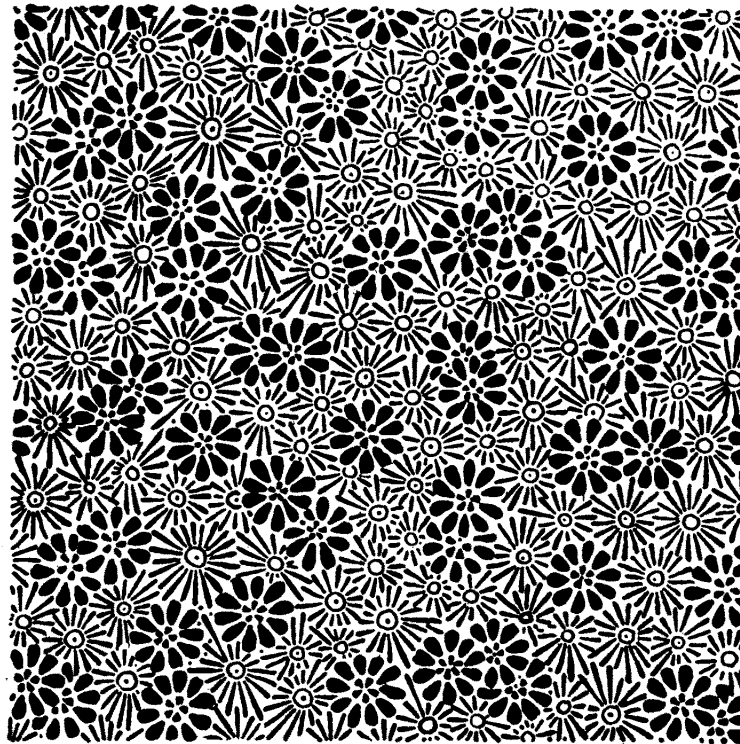
177. DIAGRAM SHOWING GEOMETRIC RECURRENCE OF FEATURES NOT GEOMETRICALLY DISTRIBUTED.



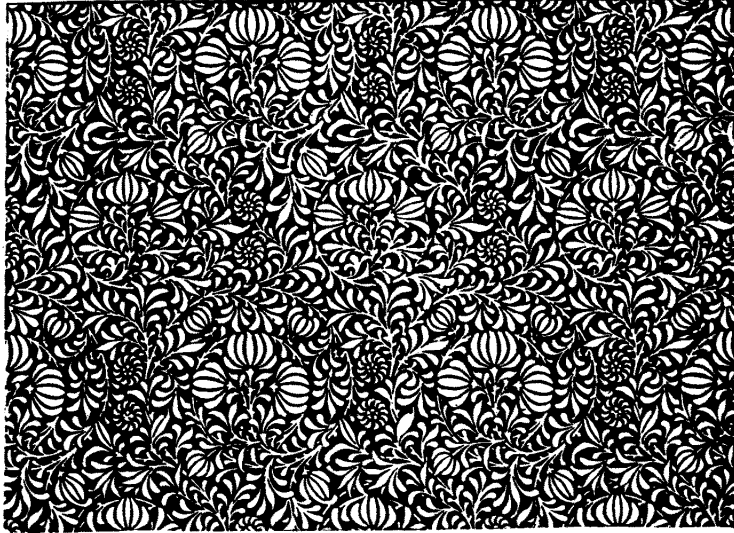
178. OLD LINEN DAMASK PATTERN FALLING INTO STRIPES.

prominent than another—in the manner of the daisy pattern overleaf (179)—and that is an exceedingly difficult thing to do. But the way to do it is, not gaily to scatter daisies about upon the paper, but to plan them (see page 89 *et seq.*), and, even then, the uniform covering of the ground involves an amount of experiment and reconsideration, which is in itself enough to explain the comparative rarity of such patterns. Unpretending they may be ; but there are occasions when what is wanted is simplicity verging even upon insignificance, and where yet obvious geometric forms would not do. Hence

the need for all-overish ornament—pattern which is meant to break a surface or a colour and not much more. Even then it is not a bad plan to introduce into it features such as the circular groups of flowers opposite (180), and the little flowers in upright pairs between, which, though in a measure lost in the even distribution of detail, may be relied upon to assert themselves, if anything catches the eye at all; and these are planned, of course, with a view to their effect in repetition. The difficulty and danger of design is lessened in a pattern in which there are such points of emphasis (however



179. FEATURELESS "ALLOVER" PATTERN.



180. FEATURES DISGUISED BUT NOT QUITE LOST IN "ALLOVER" EFFECT.

slight), features balanced one against the other, supporting it may be or counteracting one another, and yet producing an effect of even weight; or in a pattern in which there are marked governing lines, whether symmetric and plainly revealed, as in illustration 181, or flowing as it were freely, and partly lost in scrollwork or leafage. To lose the lines of recurrence altogether, as in illustration 182, is not easy.

Insistence upon the necessity of governing lines in pattern must not be taken to imply that they must always be insisted upon or that they may not assert themselves too strongly. There is a point at which they are an annoyance.

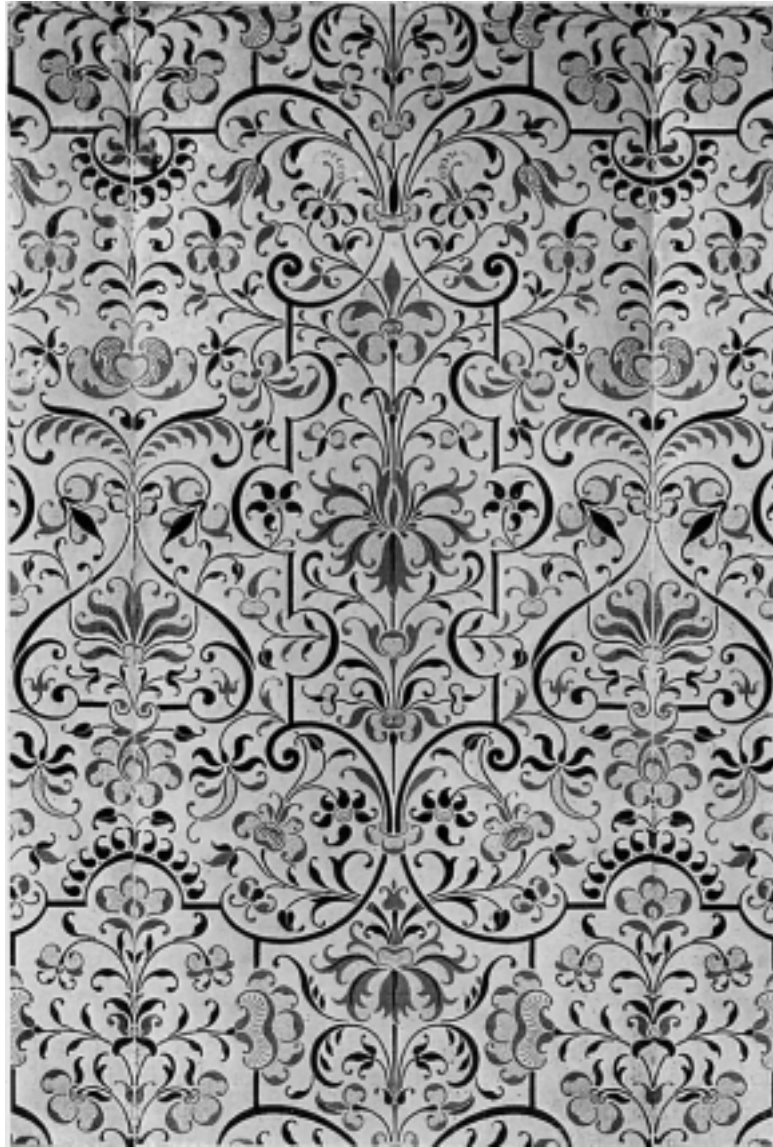
It may be expedient to subdue them—even to efface them at times. The necessary subjection may be effected in various ways. They may be arbitrarily interrupted. They may be overpowered by detail, not perhaps very significant in itself. Two or more schemes of design may be interwoven, the one

asserting itself here the other there, and each calling attention from the other. The lines themselves may be so ingeniously interlaced that it is hard to disentangle them. Some of them may be traced merely in outline, hardly strong enough to hold its own against more substantial features, or in a colour having more affinity with the ground than with the ornament generally.

But the most usual way of disguising the skeleton is, taking the hint from nature, to clothe it with something in the way of foliation—by which the bare constructional lines are as effectually hidden as the branches of a tree by its leaves. By this means the spirals of a scroll can be made to assert themselves as much or as little as occasion may demand. Only if the curves are not well-considered it is hopeless to try and make up for that by foliation, to disguise bad lines by leafage. A broken-backed scroll betrays itself beneath it all. There is no disguising its native infirmity. Pattern is vertebrate; and in a scroll the spinal cord is very plainly pronounced.

As to whether it is better to reveal or to disguise the construction of a pattern, to insist upon it or to call attention away from it, that is a question to be answered partly according to the temperament of the designer, partly by the circumstances of the particular case. Either plan is best upon occasion. But it is a point upon which the artist should in every case make up his mind at once. He should know what he is going to do, and do it deliberately.

Referring to the popular prejudice against anything like formality in design and especially against anything which "you can count," as they say, the public has a right to call the tune it pays for, and will no doubt get what it wants. If it will have nothing of severity or restraint in pattern, so much the worse for design. If, however, any student of ornament should feel that way, so much the worse for him, or for his chances of success in this direction. His wiser



181. DESIGN IN WHICH MARKED GOVERNING LINES STEADY THE EFFECT.



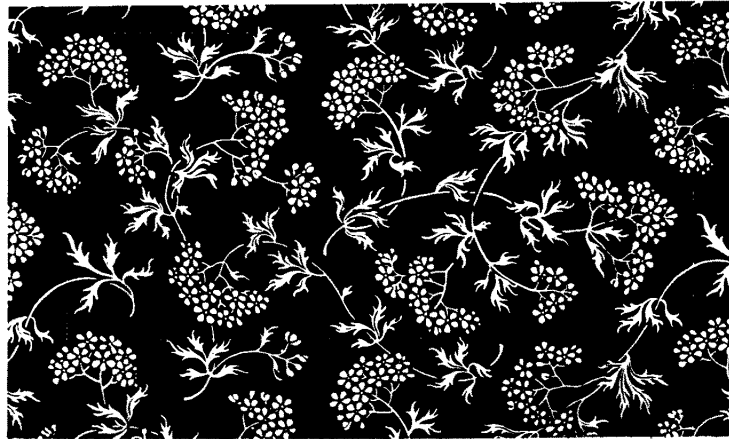
182. WALL-PAPER PATTERN IN WHICH THE LINES OF RECURRENCE ARE PURPOSELY LOST.

course would be to turn his attention to some branch of art for which he has more aptitude: he lacks the instinct of pattern design. A wilful world will have its way. An artist should know that, in sacrificing everything in the nature of formality, we renounce much of the dignity which belongs

to the best in whatever form of art. The finest of old pattern work is invariably formal and owes to formality something of its noble character.

Apart from that, it simplifies, as was said above, the problem of design, to accept the recurrence in it of a feature more or less plainly marked. And it is not altogether a matter of choice. In any design not absolutely all-overish one feature, or some features, must be more emphatic than the rest. Over-emphasis is provided against by points of lesser emphasis, to balance them, and points of lesser weight again to balance these perhaps. By the careful balancing of parts, it is possible, if not easy, to draw off attention from any formal plan. Indeed to such purpose has the art of hiding art been exercised in this respect, that the advocates of "go as you please," seeing in some good patterns no evidence of construction, are not to be persuaded that they were ever built upon a plan. They may take the word of a designer for it that they were.

The dress pattern below (183) is of the class called free.

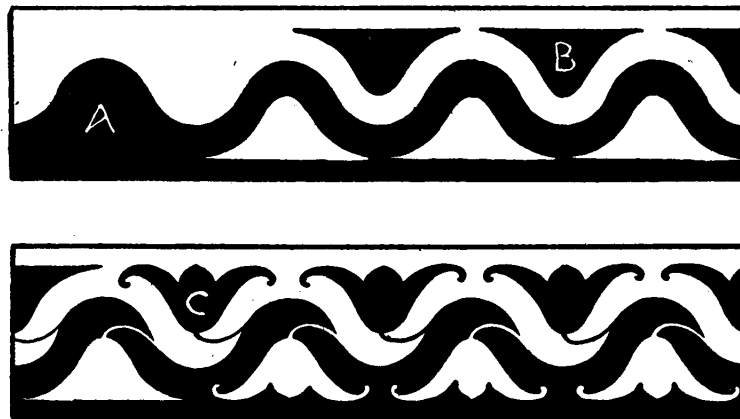


183. "FREE" DRESS PATTERN DELIBERATELY PLANNED.

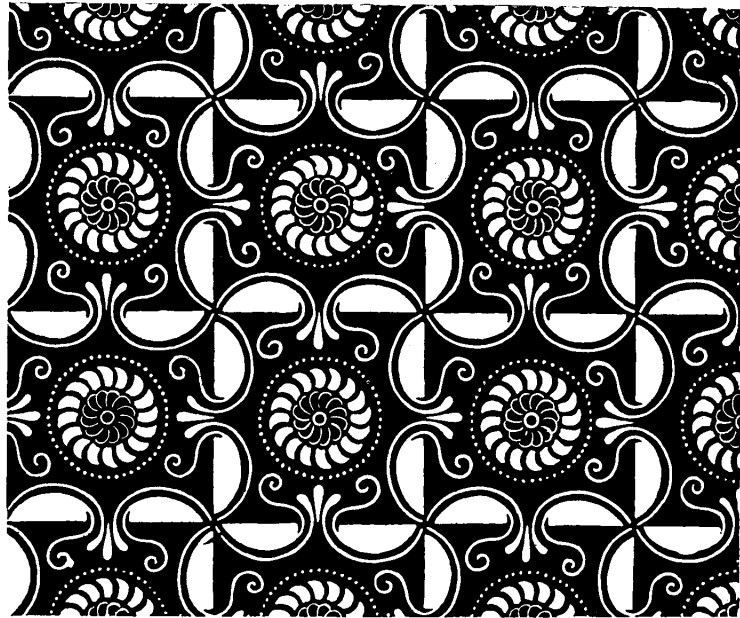
But it was as deliberately set out as if the geometric construction were conspicuous in it. If you detect no formal lines in it, it is not because the plant was allowed to trail as accident would have it—there was nothing free and easy about its disposition—but because the lines of growth were from the first schemed with a view to seeming freedom, and the details were so plotted as to divert attention from the system upon which they are distributed. The system is there.

If you would avoid the unforeseen in your completed work—and the unforeseen reveals itself often in the most unsatisfactory manner—system is essential.

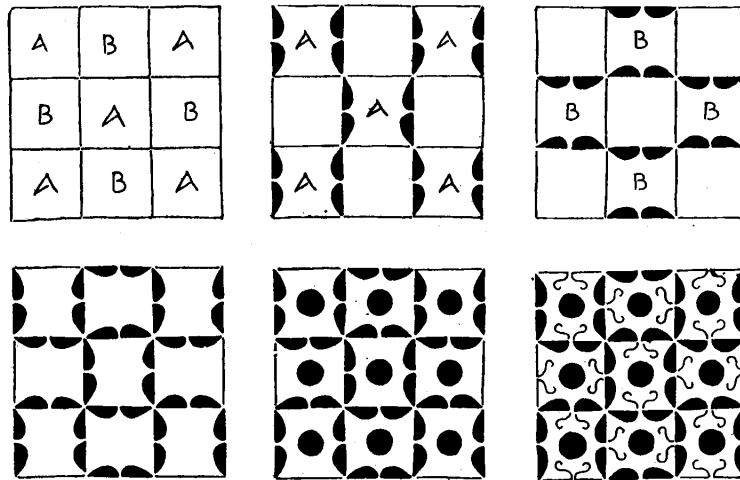
A practical designer does not idly let the pencil in his hand meander about upon a sheet of paper, in the vague hope that something may come of it. He starts with a definite notion of some sort—a happy thought, an image in his mind perhaps, or, if not that, the idea at least of the sort of thing he wants, the thought of certain lines or masses, or the combination of the two, which promise when repeated to make pattern.



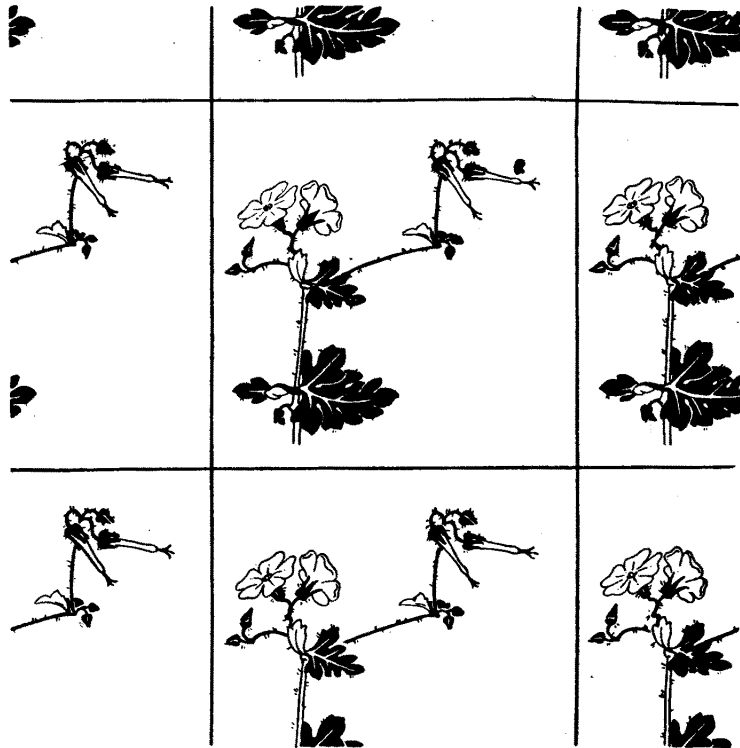
184. DIAGRAMS SHOWING DEVELOPMENT OF A "COUNTERCHANGE" BORDER PATTERN.



185. GEOMETRIC DIAPER PLANNED AS IN DIAGRAMS BELOW.



186. DIAGRAMS SHOWING STAGES IN THE DESIGN OF A GEOMETRIC DIAPER.



187. DIAGRAM SHOWING A FALSE START IN DESIGN.

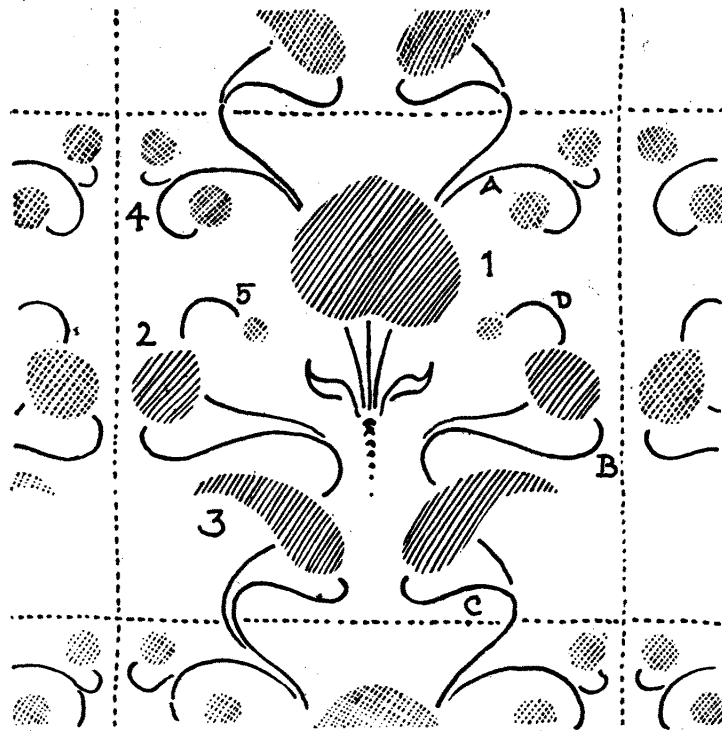
The lines upon which a design is planned need not, it has been explained, form any part of the pattern. But, if they do, it is easier to trace the steps by which it came to its effect.

Take the simplest of patterns, a border (184) in which the repetition is only in the horizontal direction, and begin with a wave line down its centre dividing it equally into two halves, the one white the other black (A). Following the lines of the wave on the one side, and of the margin on the other, we arrive in the simplest way at a sort of double wave giving a white enclosure in the black space and a black one in the

white (B). To turn these into flowers (C) and to give them stalks to connect them with the waved line is an obvious thing to do ; and so we arrive, almost before we know it, at a complete and consequent counterchange pattern.

The genesis of a geometric diaper (185) is scarcely more difficult to trace.

The initial idea worked out on page 169 (186) was, a flooring pattern, planned upon the square therefore, or rather, as it happened, the double square working as a drop. The double square and the desirability of retaining the square form, suggest an equal-sided unit, merely turned about, to



188. DIAGRAM SHOWING THE START OF A DESIGN.



189. DIAGRAM SHOWING DEVELOPMENT OF 188.

mark the double square, and (in the flooring) to prevent the effect of lines in one direction. But though it was advisable to retain the square form it was not desirable that it should assert itself too prominently. The pronounced additions to square A in the second of the smaller diagrams (186) effectually prevent any such danger; and, repeated in the cross direction in squares B, they give in the fourth diagram already a coherent pattern. But it is empty, and the proportion of light and dark is not what was wanted. A central disc of black upon the white puts that right, and the continuation of the curved lines in the direction of the disc does away with the

disconnected look of the various parts. The completion of the design (185) is then only a matter of detail. The square divisions are kept, and remain a feature in the design; but attention is diverted from them by the wave-lines crossing the lattice, which give yet more emphatic features, and take the eye from them.

One sets about the design of a pattern of which the lines of construction form no visible part in much the same way—with a definite idea, and on definite lines, but *never* with any definite detail, such for example as a natural spray of flowers.



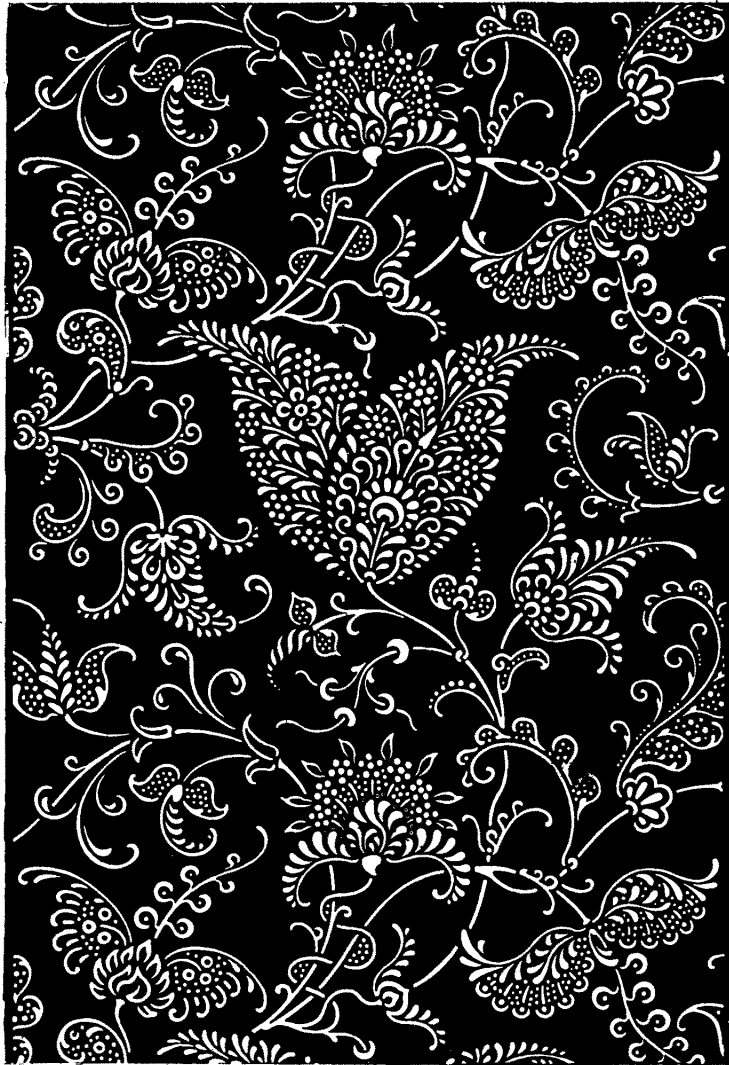
190. DIAGRAM SHOWING START OF A DROP REPEAT.



191. DIAGRAM SHOWING DEVELOPMENT OF 190.

Painters unpractised in design assume sometimes that they have only to repeat at given intervals no matter what study from nature, and make good the connection between the repetitions of it, and the trick is done. It is not quite so easy as that. Let any one try and connect the isolated details (187) on page 170.

The natural lines of a flower, determined by no thought of repetition, are scarcely likely to bear repetition very well, and the difficulty of working up to nature, and comprehending such naturalistic details in any satisfactory scheme of



192. WALL-PAPER PATTERN.

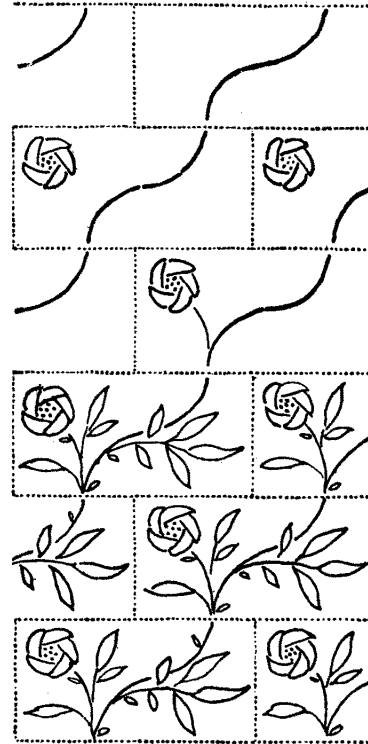
composition, is extreme. If anything results that way which goes for ornament, it is by accident and not design. Emphatically that is not the way to set about it. A designer makes his flowers grow his way.

He starts, never with detail, but with one or other of the two important factors in design, line or mass—whichever, according to his aim, naturally takes precedence. In the case of a scroll, he will first get right the sweep of the lines, before beginning to clothe them; in the case of a floral pattern, he will more likely dispose his flower masses in the order in which they should come, leaving lines of growth and foliage for after-consideration.

It must not be supposed that defects of construction are to be made good by clothing or disguised by foliage. No one worth deceiving is deceived that way; and any one disposed to scamp preliminary work should know that in the end it does not even save labour. Starting with the idea of a symmetrical design in which the flowers and buds shall be the prominent features—the designer starts naturally with what he desires should first be seen—he begins by planting somewhere about the centre of the repeat, say, a heart-shaped mass (1) diagram 188. That perhaps suggests to him at either side a smaller bud-shape (2), near enough to the margin to group with its repeat, and so be useful in taking the eye from the joint, designed to balance the heart-shape, but not compete with it in mass. These forms repeated suggest, as a means of breaking the plain space below, features of intermediate size and different shape from either (3). A still remaining vacant space or belt of ground between these and the heart-shape below, determines the introduction of a pair of smaller buds (4), which in repetition give groups of four, valuable if only for variety's sake. A space of still too open ground suggests additional budlets (5), far enough apart to appear singly in contrast to the pairs about them. These points of interest determined indicate of themselves the lines to connect,

correct and counteract them. The order in which they successively occurred is given by the letters A B C D.

The designer may or may not, in planting such features on the ground, have somewhere at the back of his mind an idea as to the way they shall eventually be connected; but the connecting lines must in the end be determined by the necessity of accounting for those masses as they stand. Supposing them to be flowers, they must grow in some coherent way. Lines and masses once determined, the next process is to give them more specific shape, and to modify them to some extent in so doing (189); to evolve perhaps out of the heart-shape a conventional flower, out of the smaller shapes husks with berries. The lines become connected stalks, clothed in the end with foliage, the scale of which is fixed by the spaces to be occupied, and the character by that of the flowers.



193. DIAPER SHOWING "BRICK-
WORK" PLAN.

Invention, it will be seen, is here progressive. Each advance enables the designer to see further ahead, as when, in climbing, you reach another ridge of hill. To a man in the vein, one move suggests the next—he may not have known what he was going to do, but, one step made, he feels the next must be just so,



194. FLORAL PATTERN IN WHICH THE DISTRIBUTION OF THE FLOWERS WAS THE FIRST STEP OF THE DESIGN.

and no otherwise. What is done pledges him to something further.

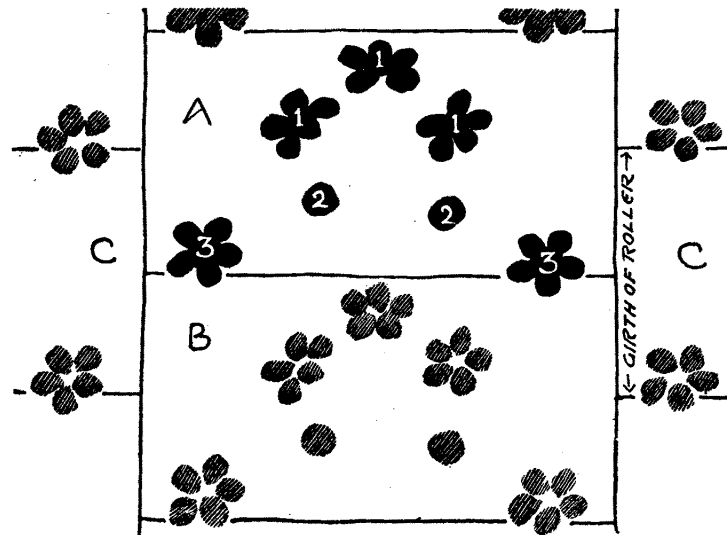
The process of designing a drop pattern is set forth in diagram 190, in which much the same forms as before are purposely employed.

In this case it is more than ever necessary to repeat each form, as soon as determined, in the outer spaces round about the central square (containing the unit of design, but not the parts of the pattern in their entirety). The cone-shaped feature (2), for instance, not only oversteps the line, but grows from a stalk which trails over from the side. That much settled, the balance and the lines to the artist's satisfaction, he can safely go on to the details—in this instance, as it

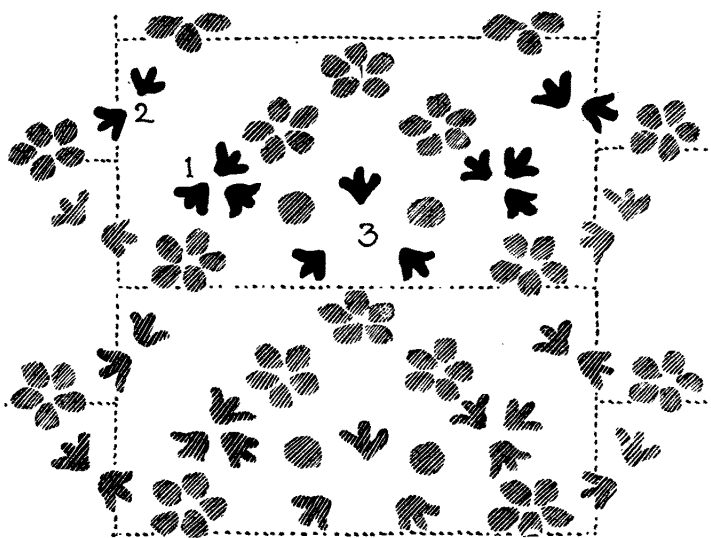
happens (191), very different indeed from the last—from which it will be understood how little the planning or first roughing-out pledges one to any definite character of detail. Either of these two rough first suggestions might just as well have been carried out after the manner of the other. The completion of a pattern very similar in detail to 191 is shown opposite to it (192).

The main point to bear in mind is that there must be harmony between the detail and the way it is planned. Comparatively natural flowers must grow in a comparatively natural way (194). Forms more deliberately ornamental (192) demand correspondingly formal lines to accompany them. It is in the precise relation of the two that the taste of the artist is shown.

The evolution of a design beginning with line instead of mass, is shown in the diagram illustrating the brickwork plan (193) in which the consecutive steps were : the wave-line across



195. DIAGRAM SHOWING FIRST STAGE OF A DESIGN.

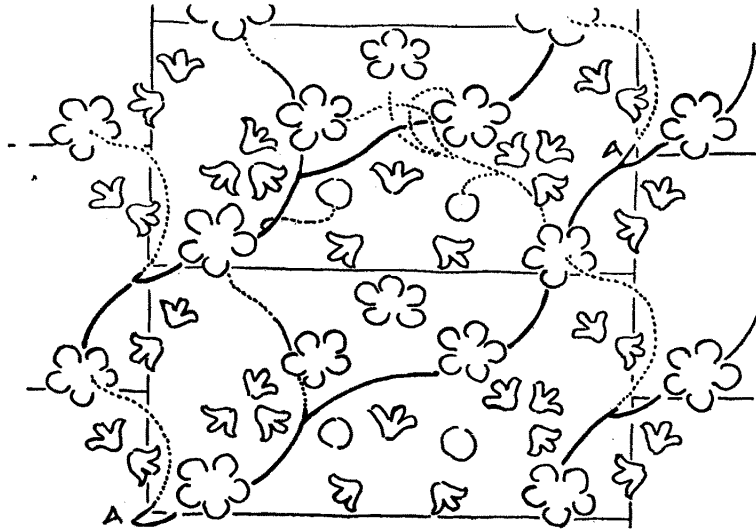


196. DIAGRAM SHOWING SECOND STAGE OF DESIGN (195).

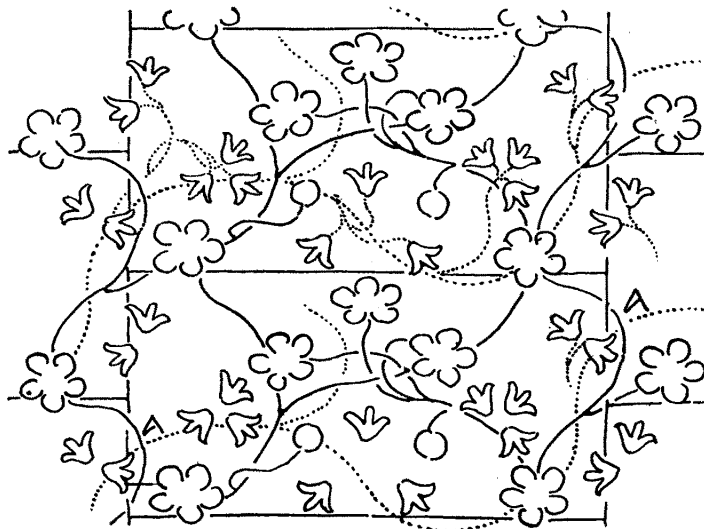
the brick; the continuation of the line across the other bricks, to see how it would come; the placing of the flower spots to steady the effect; their connection with the main stem; and the final filling out with foliage.

Whether it is better to start with line or mass depends upon what you want to do. It is as well to begin with what is most important. If you want grace of line, that must be your first thought. Line deserves prominence in design only on the condition of its being beautiful. That is where the designer comes in.

In the case of deliberately floral design (194), the more convenient plan is to begin by distributing the flowers (assuming they are to be at all prominent), settling where they shall occur, their size and shape, grouping them here into bunches, there breaking the ground with isolated blossoms or smaller buds, but considering them always as so many colour patches. The main stems from which they grow may then be thought



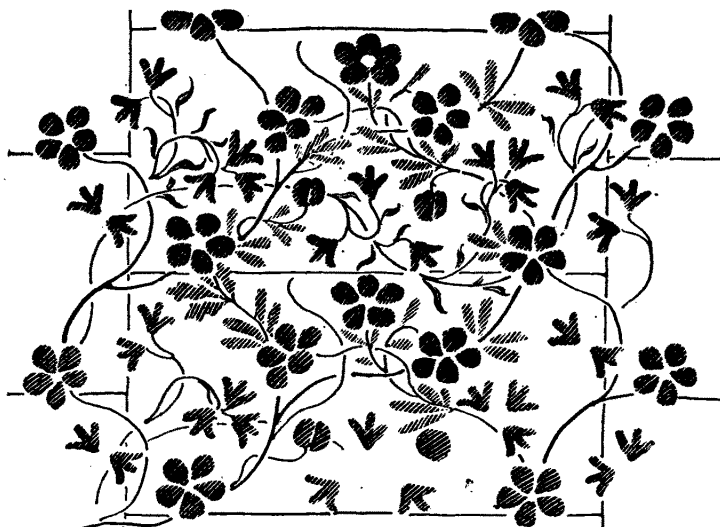
197. DIAGRAM SHOWING THIRD STAGE OF DESIGN (195).



198. DIAGRAM SHOWING FOURTH STAGE OF DESIGN (195).

of, and finally the foliage which is to occupy the space between the flowers, avoiding them it may be or backing them.

The stems of flowers (which must be natural in proportion to the naturalness of the flowers and leaves) are a standing difficulty in design. You must have them but you do not as a rule want them to be marked; and they have a way of marking themselves very determinedly. The wary artist in planning his design bears in mind from the first the necessity of something like natural growth in a natural flower, but still he starts with the flower masses—unless of course the flowers form no important part in his scheme; in which case he begins with the foliage, if that is more important; but flowers insist as a rule upon being the first consideration. Absolutely natural growth is rarely possible in pattern, even were it to be desired. It takes beautiful lines but seldom quite the lines wanted in a given pattern. It is expedient in such case to



199. DIAGRAM SHOWING FIFTH STAGE OF DESIGN (195).

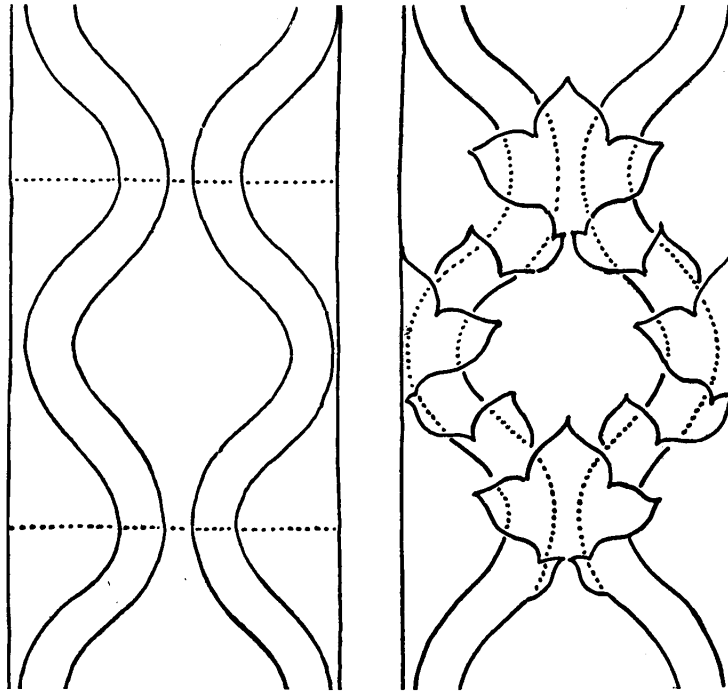


200. PORTION OF DESIGN 195 FINISHED.

disguise or lose the line of growth in foliage—much as it is lost in nature.

The development of a fairly complicated floral, but not too naturalistic, pattern, is traced in diagrams 195 to 200. The initial idea was a free-growing pattern in which flowers of relatively large size should be supported by smaller ones, of different colour for variety's sake—a double growth that is to say. That would give also an opportunity for variety in the colour of the leaves. Naturally one growth would be more prominent than the other.

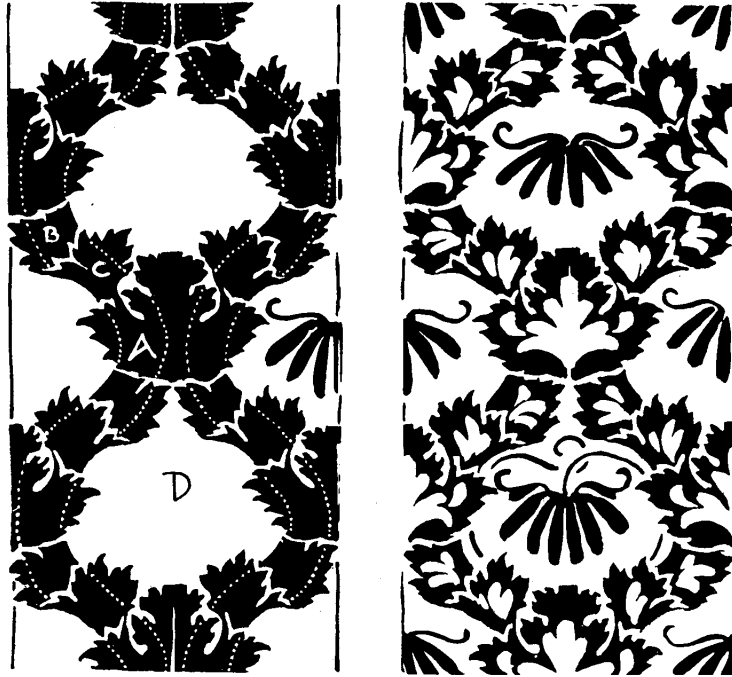
The first thing to do, having settled that it should be a drop pattern (the dimensions of the printer's roller settled that it should be twice as wide as it was deep), was to plant the more important flowers in place, as at A (195). A central group of three large flowers (1) and two small buds (2), when repeated as at B, suggested the placing of further flowers (3) between, rather nearer to the side edges. These repeated



201. DIAGRAM SHOWING FIRST AND SECOND STAGES OF A VELVET PATTERN.

as at C, there seemed to be sufficient of this sort, remembering there were others to come. The number and position of these others (naturally of a different shape) was determined (196) by the ground left bare. They are what the vacant spaces seemed to call for: a group of three (1), to stop the downward gap; a pair (2), to break the joining line; three separate flowers (3), to fill the vacant spaces in the centre.

The next consideration was the order in which the flowers should grow, and first the larger ones. A solid line from A to A (diagram 197) shows a stem which runs through and joins on satisfactorily at the sides; it had only to be repeated in the upper part of the drawing to suggest the



202. DIAGRAM SHOWING THIRD AND FOURTH STAGES OF A VELVET PATTERN.

more or less contrasting (dotted) lines connecting the flowers with it.

The growth of the larger flowers accounted for, that of the smaller (given in dotted lines in diagram 198) had to be schemed, which left only the leafage to be blotted in (diagram 199) and the map of the pattern was there.

In carrying such a sketch further (a portion only of the finished cretonne is given on page 183) the shapes of the forms might well want considerable modification, something would have to be erased or added, but the groundwork would be all there, the plotting done, and the designer free to follow the promptings of his artistic impulse. A design of this kind is

easier to manage if the distinction between the separate growths is made clear by the use of very pronouncedly different colours, such as red and yellow for the flowers, blue and green for the leaves—even though there should be no intention of any such sharp contrast in the final effect. Some such guide is almost necessary, to enable the designer to keep the threads of his design separate. Indeed, in the case of a complicated design of any kind, and especially where there are two or more separate elements in it, it is not a bad plan, even though it is to be eventually in monochrome, to use different tints in plotting it out. It reduces the very serious danger of confusion to a minimum.

The design of which the genesis is next given starts neither from stem lines nor from flower masses. The idea was to get a broad pattern, bold but not too bold, in three shades of colour, light, dark, and middle tint, the kind of relation which is so effective in old velvets, where the glossy satin ground, the dense rich pile, and the intermediate uncut, ribbed surface known as "terry," give three very distinct stages of colour, and lead, almost naturally as it seems, to a characteristically rich sobriety of effect.

Thinking still of velvet and the softening effect of the outline in terry, it was only natural to determine upon the middle tint for the outline.

The first thing to be settled was the main lines the design should take. It was as well, as a bold effect was wanted, to make them very bold, they could always be refined and softened. That being so, there could be no better plan than waving bands which in opposition give the ever satisfactory ogee shape (201). But as it was not a geometric pattern that was desired, these broad bands had forthwith to be broken in some way; which was very simply done by treating them as bands of foliation, twisting about, and to some extent disguising the too plainly geometric planning. This was a means of getting, too, some life into the lines. It



203. FINISHED DESIGN OF VELVET PATTERN.

was high time by now to think of the pattern in mass as dark upon a light ground (diagram 202), and to sketch in not merely the turning over of the foliage but the serration of its outline. The broad bands began on this to disappear, but the lines were still stiff, and the masses of light and dark in too crude contrast. That was corrected by the introduction of dark foliage into the ground space D, which very distinctly asked for it, and of subsidiary foliation in the ground tint upon the broad scroll spaces A, B, C. In these four spaces together with the turnover of B and C, the whole pattern, it will be seen, is comprised.

Here then was the distribution of the pattern with the desired balance of light and dark. It is not necessary to show the effect of carefully drawing the forms and outlining them with the middle tint. A certain hardness of form remained, and the effect was generally rather bald. How this was set right by slightly foliating the outline itself and by breaking either light or dark, wherever it seemed necessary, with veining in the middle tint, is shown in the completed pattern (203), where the bands upon which it is set out are lost to sight though their influence is no doubt felt.

By the sort of counterchange of light and dark (the abrupt transition of the one to the other softened always by the intermediate outline tint), a certain mystery is produced which is one of the aims of surface decoration.

At the same time it was easy, by proceeding from the first logically and upon well-considered lines, to make sure that whatever lines might assert themselves—some eyes are keener to detect them than others—they should at least be orderly and not ungraceful.

The intelligent reader who has followed the working out of the problems thus far explained will hardly need to be told that the forms of a design take shape only gradually.

The way of the experienced designer is never to settle any detail definitely until the balance of his lines and masses

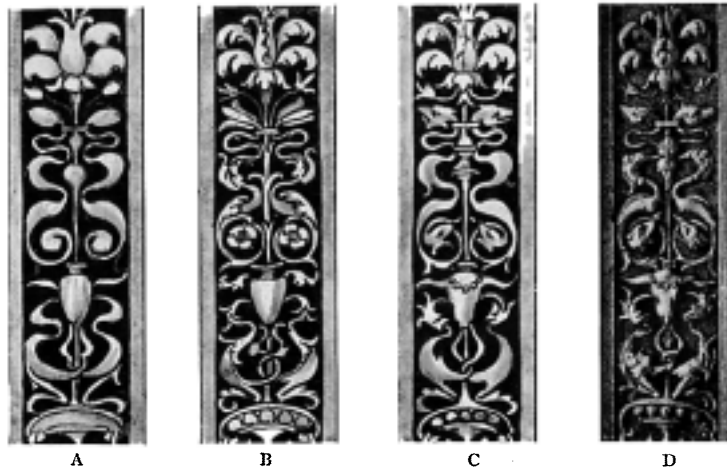


204. SIMPLE PATTERN AND ITS AFTER ELABORATION.

is completely to his mind. Outline is almost the last thing he puts in, never the first. After it there remains only to fill in details such as the veining of leaves, if any, or perhaps that extra pattern upon pattern (204) which meets the conditions implied by certain processes of manufacture.

One distinct advantage in "inhabited pattern" (the phrase is Morris's but the device is Persian) is that it enables one to conciliate those who look at a design with their nose too near it, without sacrifice of breadth in the end. For, in its place the "pretty" detail goes only to qualify the colour, and the broader lines of the design reveal themselves.

The lines and masses first put down upon paper are at the most provisional. It will never do to begin with finish. The very mention of such a thing is a flat contradiction in terms. Every line mapped out in your rough scheme may have to be altered; and the advantage of in the first place only blotting it all in, and in fact the reason for doing so, is that you are



205. DIAGRAMS SHOWING DEVELOPMENT OF DESIGN.

not committed to anything, and that you have not yet carried any one part of it to such a degree of finish or satisfactoriness that you are loth to wipe it out. Your mind remains open to every suggestion which may arise out of the perhaps accidental coming together of the lines on your paper. Pledge yourself to a single bit of detail, and there is no knowing what trouble you may have in trying (after all vainly perhaps) to accommodate everything else to it.

The chances of design are illustrated in the diagram above setting forth the possible evolution of a portion of a pilaster—not, for once, repeated. The sculptor had an upright space to fill. He began with vague forms (A, 205), thinking so far only of the way they occupied the space, their grace and balance, and the pleasant way they broke the upright band. The actual drawing of the shapes was still very much in the air. As likely as not he had no idea how he would carry them further. That would depend upon what they suggested to him once he had roughed them in. They might have developed into foliation, buds, a central vase to steady the

design, as indicated at B, the kind of thing familiar enough in Italian arabesque. As it happened they took another shape, the form of grotesque creatures more nearly animal than vegetable (C). What might have been buds became heads, and what might have been their stalks long necks or other impossible limbs, the vase-like feature the skull of an ox, and so forth, after the manner of grotesque ornament.

A designer can see quite plainly in the finished work D the lines on which the sculptor set out to design his pilaster; and it is the perception of the underlying lines which gives him satisfaction in the work: they show the ornamental purpose of the man.

I have chosen this example of grotesque ornament because it is with animal forms that designers oftenest go wrong. They make use of animals to fill up a space, or on the futile supposition that they enhance the value of ornament. They do so only on the condition of being first of all ornament.

A designer does not import animals into his pattern. He starts with certain vaguely ornamental forms. As the pattern grows, he feels the want of here and there a solid shape or patch of colour bigger than the rest, which develops it may be into animal or human form. It was the want of a greater weight of ornament as a termination to the spiral in the pattern overleaf (206) which suggested the scroll's growing into a creature; and that led naturally to its bursting out into life at other points too—a freak of invention, it seems to me, excusable only in proportion to the reticence of the design. Creatures thrusting themselves upon the attention would be unpardonable in ornament. As giving a certain point and piquancy to a tangle of scrollery they justify themselves now and again.

Pattern, as I have insisted throughout, should be systematically planned—the particular plan adopted will depend, of course, upon the kind of pattern and its purpose. A designer

naturally avoids the plan which has a tendency to encourage lines contrary to his scheme, and *vice versa*.

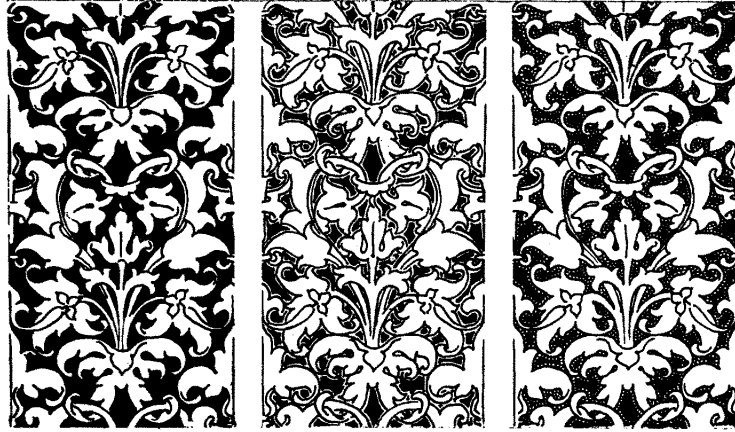
It is not meant to say that the designer should be hemmed in with arbitrary rules. Occasionally he may start very much at a venture, pledging himself (on the understanding that he is always free to retract) to something quite experimental, just to see what will come of it in repetition and what it will suggest. That is better at all events than hesitating on the brink of beginning. The plunge is salutary, and stimulates invention. The difficulty is to know when to give up an abortive attempt. Only the artist himself can say at what point his endeavour is hopeless. But he may be cautioned against persisting in it when it is past hope.

There comes a point (and it comes very soon sometimes) when, unless he is very firmly convinced that there is something in his idea, it is better to abandon it and start afresh. It costs a sharp pang to let go, but, the disappointment past, we realise the wisdom of such sacrifice. Any way which leads to satisfactory design is right; but as a rule it is waste of time to plunge recklessly into pattern. There is not often much use in putting hand to paper until you have a notion of what you are going to do. Do not scribble about. Wait until something comes to you. In so far design is inspiration. It comes to you. It happens. You have in your mind's eye a glimpse of coloured patches disposed in such and such a way, or of lines flowing sweetly into ornament; you have a vision of luxuriant growth bursting happily into bloom, or of barely clad branches austere against the sky. Your starting point may be a memory of something whispered by nature; it may be a provocation, a challenge from the lips of art. Possibly the decorative or technical problem may itself ask for solution and so set you on the track of design.

Without some sort of notion a designer does not make a promising start, and the clearer his idea both of the construction of his pattern and of its ultimate form, the better; but



206. EMBOSSED WALL PATTERN—ARABESQUE BURSTING OUT INTO GROTESQUES.



207. DIAGRAM SHOWING AFTERTHOUGHTS AS TO TREATMENT.

the longer he can keep his ideas in suspension, to use a term of chemistry, the more freely will he work.

A notion is manageable only so long as it remains in the fluid state. Once it has been allowed to crystallise into definite form, it is no longer possible to mould or modify it at will.

Every advantage should be taken of the possibilities which open out as a designer proceeds. Many a design works out in such a way as to compel departure from the initial idea. What was to have been an open pattern promises to be better as a full one; what was to have been full reaches a state when it is advisable to leave it open. The diagram (207) shows three states of the same design—the first as it was originally planned, the second with an extra outline filched as it were from the background, the third with a softer dotted outline belonging also to the ground. Afterthoughts of this kind enable one to fatten a pattern which looks starved—and otherwise to save the situation. Expedients of the kind have been abused, it is true; but if we were bound in taste

to abstain from every practical device which had been turned to vulgar account, the possibilities of design would be reduced to a minimum.

The available lines of design are by no means exhausted by the instances given in this chapter. Nor need design proceed upon any one of the plans set forth. Men of initiative will always find ways of their own to their own ends. All that has been attempted is to explain how some designs have grown, to indicate some ways in which an idea may develop and take shape. Designers with exceptionally retentive memory may be able to carry the stages of development further in their minds than others; but it seems natural to an artist to put them down on paper in the order of their progress.

XV. TO PROVE A PATTERN.

The unit of design a repeat—Repeat to be tested—One repeat not enough to show how design works—More must be indicated—Test of roughing out on one plan and working out on another—Accurate fit essential—Proving to be done at early stage of design—Test of cutting up drawing and rearranging the parts.

A DESIGN is contained within a single unit or repeat. That unit is all the artist has to design; but he must conceive it *as a repeat*, thinking always of its effect in repetition. And, unless he is repeating himself, and doing only what he has often done before, he has usually to test the repetition, before he can consider it done. Else he may have made a beautiful drawing, and yet turned out a very bad pattern.

The mistake is not to sketch out enough of the design to show how the lines will come—a common mistake of the inexperienced, of just those who can least trust their work to come right.

The safe plan is, not to be content with a single unit, but to indicate, however roughly, the equivalent to three or four repeats. One complete unit and four half-repeats, with perhaps four quarter-repeats (diagram 208), is no more than enough.

This roughing in of repeats is not the most exciting part of a designer's work; but neither is it a joy to find, when a design is finished, that it wants doing over again, or to see in executed work, too late to mend mistakes, the glaring evidence of your incompetence or carelessness.

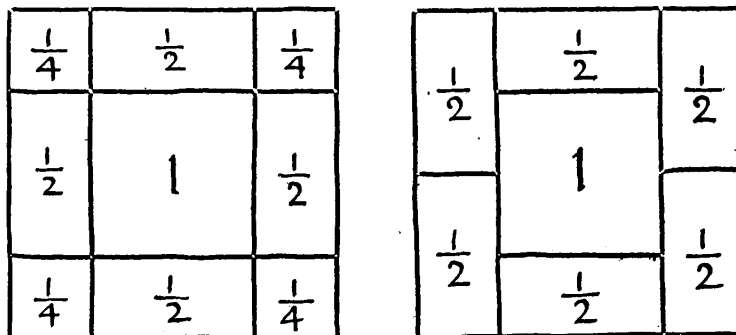
Moreover, having thoroughly tested your repeat to begin with, you have no occasion to draw more than the bare unit

of a pattern. It is a common practice to draw more of the pattern than is necessary for working purposes, and yet not enough to show how it will come in repetition.

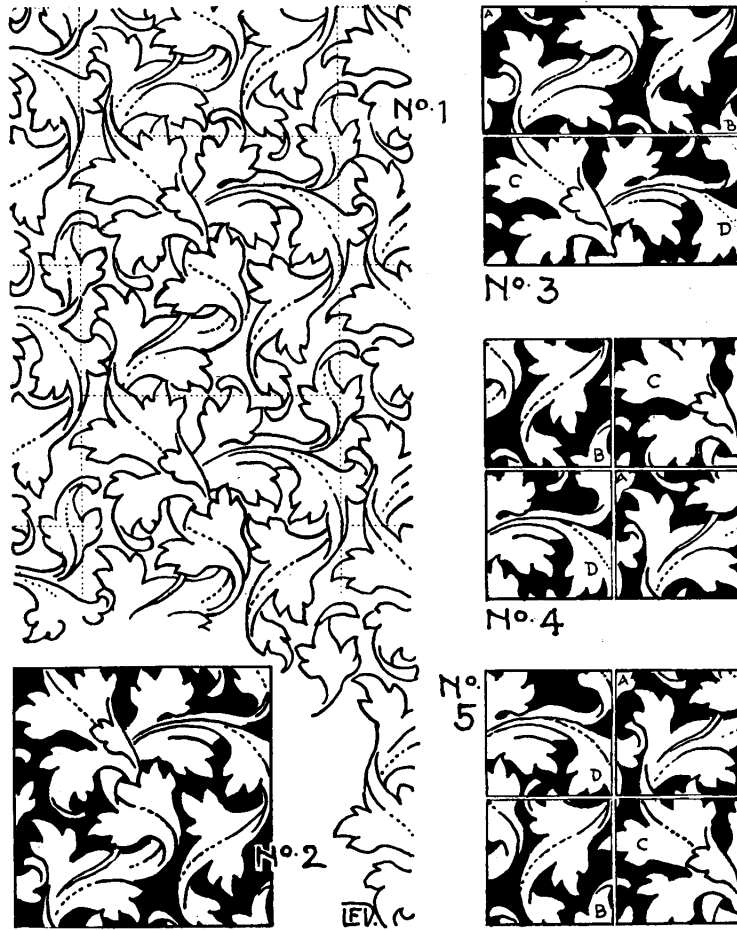
An alternative test is to rough out your design on one plan and then try it on another—to begin it, for example, on the diamond and to finish it on square lines, or *vice versa* (see diagrams 84, 87, 88, 89, 91, 92, and 210). By that means you see it as it were from two points of view, and can form a fair idea at all events as to how it works at the joints. For this purpose, also, it is necessary to start on a sheet of paper large enough to contain more than one repeat.

The best of all possible tests is, to see it repeated. And the important thing in repetition is, that the repeats, roughly as they may be drawn, should be placed exactly in their right position; that they should not be freely sketched (freely in such a case means inaccurately) but traced, or, better still perhaps, stencilled. That is a test which any one can apply; and it is infallible.

The earlier the stage at which this testing is done the better. A designer is bound in the interests of his own reputation to make sure of the satisfactory repeat of a pattern before he lets it out of his hands. He may be working at a



208. DIAGRAMS SHOWING HOW MUCH OF THE REPEAT MAY WITH ADVANTAGE BE ROUGHLY SET OUT TO BEGIN WITH.



209. DIAGRAMS TO SHOW THE PROVING OF A PATTERN.

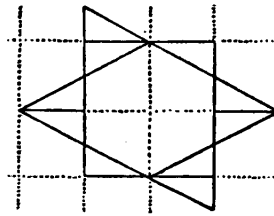
price at which he thinks that is not to be expected of him ; but, if his design does not repeat satisfactorily, it will be reckoned against him, no matter what the price paid for it ; and, on the other hand, work is likely to flow towards the artist whose designs work out all right. This much by way

of warning and encouragement. But it is not merely on the grounds of policy that this much of honesty is recommended. There goes to all good work something for which we get neither pay nor credit, but which an artist must persist in doing if only for his own artistic satisfaction. The grudging workman who is careful to stop short at what is remunerative, is not unlikely to stop short of art.

A practical designer learns to attach no great value to the look of his drawing. He finds it expedient, often, to cut it up, and rearrange the pieces—in that way testing the repeat to some extent. What it enables him to do perfectly, is to test the joints of the design. This is illustrated in diagram 209. To the left (No. 1) is the pattern, as the designer might sketch it in, enough to show the lines it will take. The unit of repeat is shown below (2). In the next instance (3) this has been cut across into two equal parts A B and C D, and the two halves transposed, so that what were before the upper and lower edges are brought together. If at this stage the lines did not fit it would be easy to set them right.

The joining of the side edges has then to be tested (4). Once more the drawing is cut in two, vertically this time, so that portions A and C can be transferred to the right of B and D. But, since this is a "drop" pattern, they have been transposed. In the remaining diagram (5) parts A and C have been left as they were (in 3), and parts B and D, duly transposed, transferred to the left of them. The four quarters of the design have thus been shuffled and dealt out in every practicable order, and each portion of it in turn promoted to the position most in view.

In the case of a pattern which did not drop the proving would



210. DIAGRAM TO SHOW HOW A PATTERN DESIGNED ON DIAMOND LINES MAY BE PROVED.

have been a yet simpler matter. The way in which a diamond may in like manner be cut up and the parts rearranged to form a square or a slanting figure, is sufficiently indicated by the accompanying skeleton lines (210). To form the slanting figure the triangular portions on either side have only to be cut off and transposed. To form the square, they need to be bisected and the wedge-shaped pieces fitted on to the hexagon.

XVI. COLOUR.

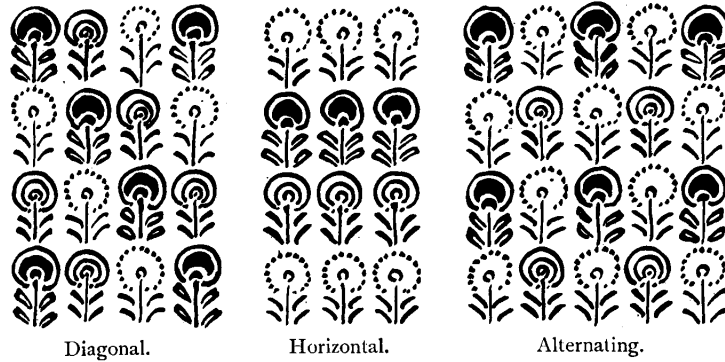
Close connection between form and colour—Effect of colour upon design—Drawing should show not merely effect of colour but its plan—A map of colour value and relation—Differences that colour makes—Casual colour—Colour and material—Geometric form softened by colour, accidental or cunningly planned—Confusion of form by colour—Emphasis of form by colour—Change of colour in ground.

COLOUR and construction are more closely connected than is commonly supposed. The colour scheme is part of the construction.

It is sometimes thought that a design may be schemed independently, and the colour left for after consideration. So, in a sense, it may, but the colouring will in that case possibly be very difficult to scheme.

Left to the last, it may make or mar the effect. It should be planned from the first. You may safely rely upon it then to make good what would otherwise be a defect or a deficiency in the form, to enliven what would be dull, to loosen what would be too tight, to steady what would be too busy, to emphasise what might else be tame, to give an air of mystery to the otherwise obvious. You cannot rely upon it to do that when the drawing is once made, though even then an ingenious designer may do much to make amends for shortcomings, if not always to rectify mistakes.

It is astonishing what havoc may be made with a design by colouring it amiss. Secondary or unimportant forms have only to be coloured insistently, and the design is at once pulled hopelessly out of shape. And this sort of thing



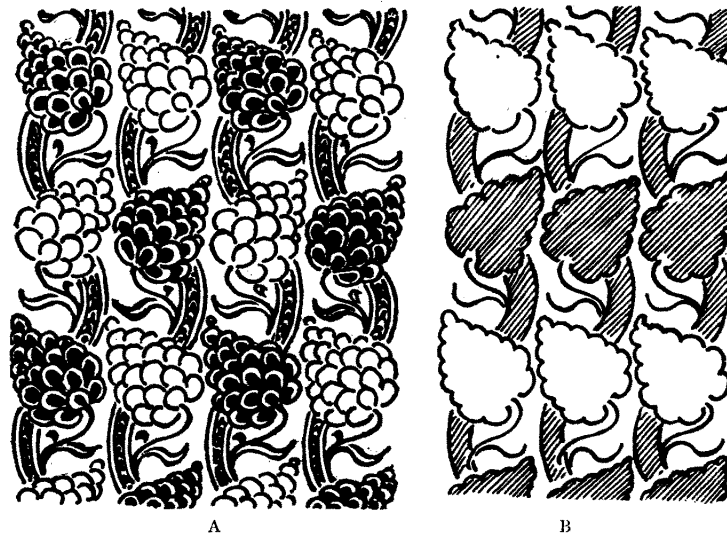
211. DIAGRAM SHOWING EFFECT OF DIFFERENT COLOUR SCHEMES UPON THE SAME DESIGN.

happens continually where an artist's designs are coloured by some one who does not see (he would have perhaps to be himself a designer, and one in sympathy with the artist whose work he is tampering with, in order fully to see that) what he was aiming at.

This may be sometimes, or to some extent, the fault of the artist who colours his design without regard to the condition (implied by commerce) that a design will be published in a variety of colourings—for which he is in duty bound to provide. The fact is a design should be coloured, not so much to show its effect in certain colours (an effect perhaps impossible to be got in any others) as to give a map of the relations of a certain number of tints, to be employed in weaving, printing, or otherwise producing it.

An artist should have clearly in his mind, and show clearly in his drawing too, which are the prominent and which the retiring tints, and what the order of their prominence or retiring—as well as which of them (if any) are designed to balance one another; for it is all a matter of design.

It concerns the designer again to know, and to show, precisely the part each tint is to play in a design. An outline



212. DIAGRAM SHOWING EFFECT OF DIFFERENT COLOUR SCHEMES.

colour may be introduced for example in the form of a patch also ; but, then, it must not be too dark, or it would emphasise itself too strongly ; and, with a view to its use for the double purpose, it may be necessary to draw a much broader line than would have been desirable if the colour could have been stronger. To tamper with the strength in the drawing is dishonest.

The colour is, in short, part of the design, and should be so considered from the beginning. You may, of course, translate a design in one colour into a design in many ; but the happiest effects are not translations but spontaneous inventions.

The lines of a pattern may be deliberately counteracted by the colour of it. A pattern planned on the chequer may be made, according to its colouring, to show perpendicular or horizontal, diagonal or cross stripes (211), the stripes of course asserting themselves in the direction of the continuity of the colour. All this is so obvious as hardly to seem worth saying ;

but the bearing of it upon rather more complicated pattern is so commonly lost sight of that it wants saying.

The change of colour in a design such as that (212, A) on page 203 does not merely enliven it by variation, and as it were enlarge the scale of it, but gives a diagonal line which,



213. WALL-PAPER DESIGN IN WHICH THE SMALLER DETAIL, EVENLY DISTRIBUTED, GIVES AT A DISTANCE SOMETHING OF THE EFFECT OF A TINT.



214. DUTCH END-PAPER COLOURED IN PATCHES IRRESPECTIVELY OF THE PATTERN.

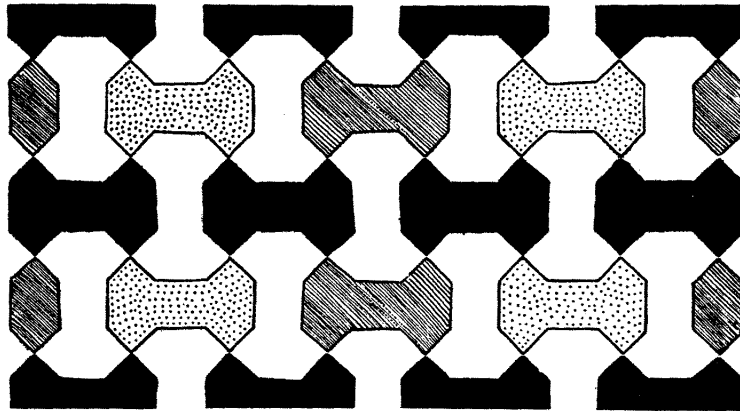
except for it, would not appear. In monochrome the horizontal bands (emphasised in light and dark at B) are what would be most prominent; as it is they are practically neutralised. It is clear how easily the vertical line might equally be emphasised by alteration of colour in that direction.

The mere fact that in the diagrams here given (212) change of colour is indicated by a different rendering of the form, goes to show the interdependence of form and colour—how one may take the place of the other and do its work, how there are sometimes two ways of expressing the same thing, the same value that is to say. The smaller brush

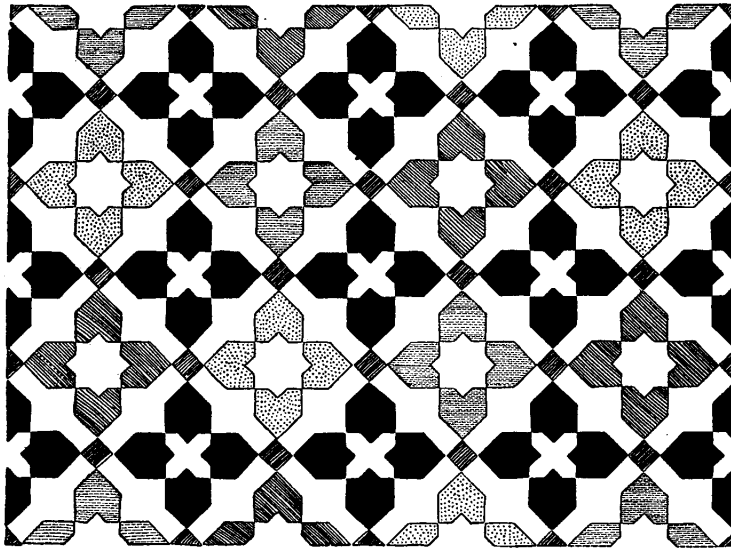
strokes in the wallpaper (213) are designed to merge at a distance with the background colour and give an intermediate tint defining the cusped shapes which are a feature in it.

Instances occur in the interlacing strapwork, for example, in Keltic illuminated MSS. where the colour changes without other reason than that the painter thought fit to interrupt the too even tenor of the tints in a quasi-accidental way. Even in more flowing ornament the artist is at times tempted to diversify the effect by colouring it in patches quite irrespective of the form. In certain seventeenth and eighteenth century "endpapers" which come to us from Holland, though they are probably of German origin, the brutality of the patchwise use of bright colours is softened by the gold ground to the pattern (black in illustration 214) and the effect is for once in a way rather fascinating. But it is only by exception that a method of colouring so unmethodical commends itself. The more or less accidental change of colour resulting from the use of material naturally varied in colour is another story.

The severity as well as the monotony of pattern may be mitigated by colour; and the designer may therefore



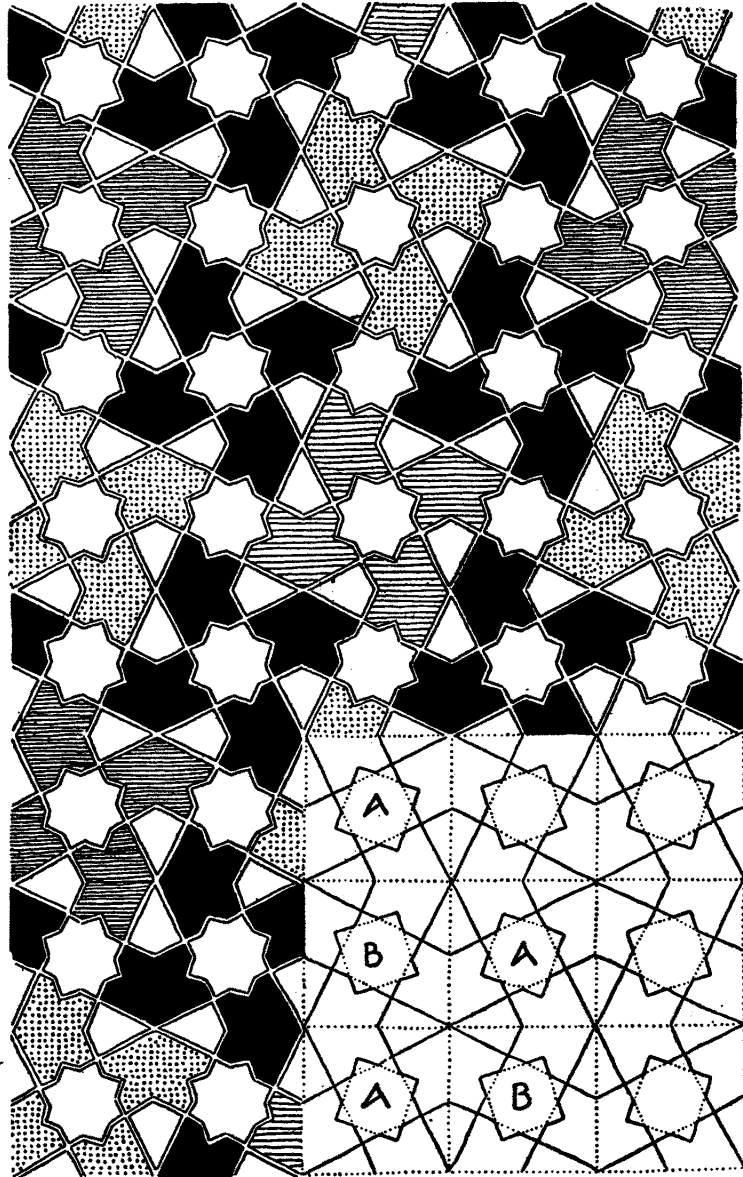
215. DIAGRAM SHOWING SYSTEMATIC DEPARTURE FROM THE SYSTEM OF COUNTERCHANGED COLOUR.



216. DIAGRAM SHOWING SYSTEMATIC DISTURBANCE OF THE
UNIFORMITY OF GEOMETRIC DIAPER.

often be severer and simpler in his drawing than he could dare to be but for his reliance upon its help. This is very apparent in the case of absolutely geometric ornament in which the form is tempered by colour.

There is no doubt the use of geometric forms was encouraged, say in *Opus Alexandrinum*, by the use of marble, in itself always unequal enough in colour to neutralise harsh form, or in *Çoşmati* mosaic, where the little facets of glass catch the light at all manner of angles and give a glitter of colour defying the utmost severity of form. But it is not merely the accident of colour which is used to counterbalance too great certainty of form. The Arabs, for example, were adepts in contradicting the ground-lines of geometric ornament and bringing into prominence forms which, but for it, one would never have suspected to be there. The colour in



217. ALHAMBRESQUE TILE MOSAIC SHOWING SYSTEMATIC DISTURBANCE OF GEOMETRIC FORM BY VARIATION IN COLOUR.

many of the tile mosaics in the Alhambra appears at first sight to be quite casual. It proves upon examination to be most thoughtfully planned. Sometimes it is focussed into points which successfully break the monotony of intersecting lines. Sometimes it is disposed in rings and rays so effectually disguising the lattice lines on which the pattern is built that it is only at a distance that they pronounce themselves.

A simple and most effective plan of theirs is to devise what would be a counterchange, but, as on page 206, whilst keeping the light units white, to vary the dark ones (215).

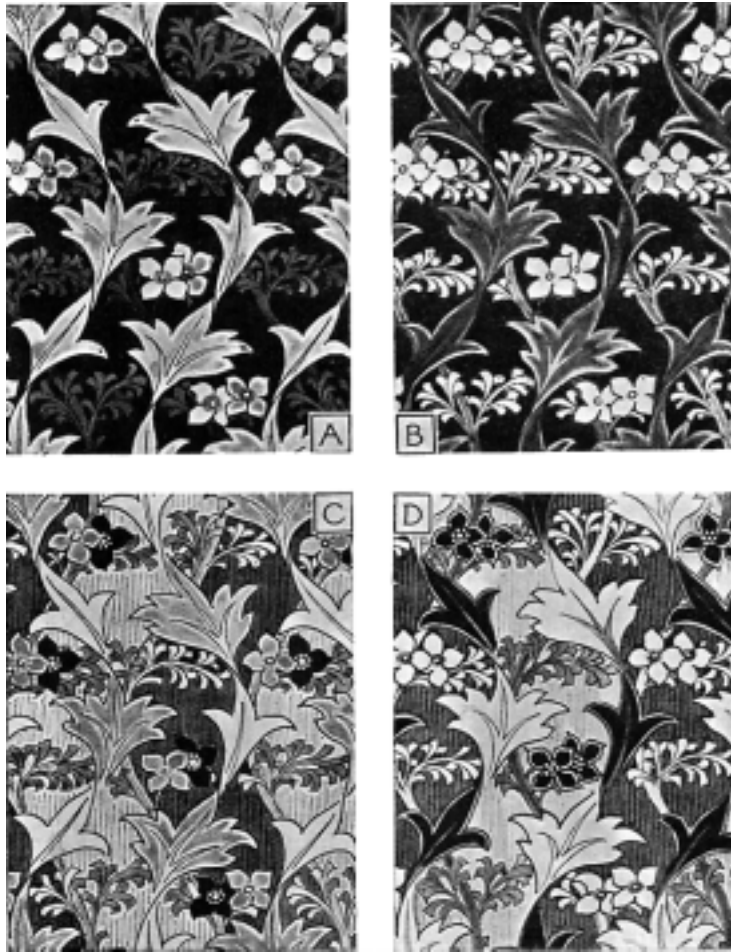
A further subtlety is to make, say, half the dark units black and the remaining half alternately green and yellow.

In the design (216) on page 207 the main forms of the pattern are as it were framed in white; half the pointed cross shapes are in one colour, the others are alternately in three different colours. But the diagonal line they would give is almost neutralised by the steadying effect of the darker forms.

All this is very much to the good in a kind of pattern, I will not say too orderly, but too evidently in order. It gives you something to find out in it—which is a great charm in pattern.

In the more elaborate pattern opposite a similar system has been observed. It is constructed on the lines of zig-zag bands (opposed to one another, so as to give diamond-shaped spaces between) crossed by similar zig-zag lines (similarly opposed). Mystery is given to it by making one of the bands in the upright and one in the horizontal direction black throughout, and breaking up the others alternately into yellow and green and yellow and blue. The result is a pattern in which the conspicuous features are strange, square-cut, twisted crosses, one half of which are black, one quarter yellow, and the other quarter alternately blue and green.

The effect of colour upon design of a less formal character is shown in four very different renderings of the same pattern overleaf. At A the flowing line of the conventional scroll



218. DIAGRAM SHOWING EFFECT OF DIFFERENT COLOUR TREATMENTS OF IDENTICALLY THE SAME FORMS.

is emphasised, at B the horizontal tendency of the flowers and smaller leafage, at C the waved bands of ground space between the stems, at D bands in the opposite direction : and further variations might be played upon the same tune. Devise a pattern ingeniously and it is quite possible, by emphasising now this now that feature in it, to give the idea of quite distinct designs.

It hardly needs to be explained how easily an obtrusive but necessary stalk or stem may be kept back by reducing it to a colour very nearly of the value of the ground tint, or how attention may be called to a flower by its brightness ; how, where two or more growths of pattern are intermingled, the lines of the one or the other may be strengthened by it ; how point may be given to a pattern by judicious variation in the colour of the ground.

Change of colour in the ground wants very careful, not to say skilful, management. The difficulty of contriving it judiciously, is in proportion to the extent of the change. The danger is, lest the patch of differently coloured ground should attract too much attention, not so much to itself as to the shape enclosing it. It is part of the game to enclose it, and, what is more, with circumscribing lines which really play a not quite unimportant part in the composition of the pattern—not, for instance, with the casual outline of leaves converging towards it.

The notion of varying the ground colour may be to some extent an afterthought, occurring only as the design progresses ; but the shape as well as the position of the colour patch is best determined at an early stage of its development.

Colour is equally of use in emphasising or in confusing form, either of which it may be expedient to do.

XVII. BORDERS.

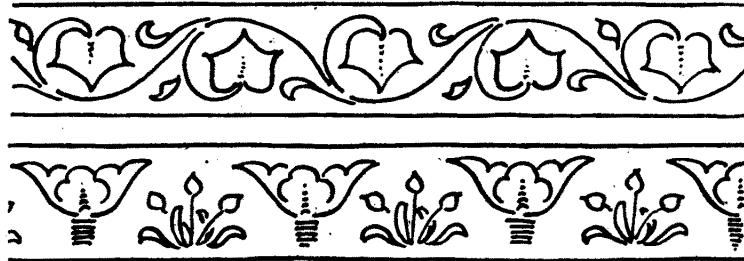
What a border is—Includes frieze, pilaster, frame, &c.—Simplicity—Short interval of repeat—Flowing and broken borders—Mere lines—Waves—Frets—Zig-zag—Chevron—Twist—Plait—Guilloche—Interlacing—Chain—Strap—Branching lines—Spiral scroll—Counterchange—Intermittent borders—Block border—Panel border—The S scroll—Natural growth—Enclosed borders—Fringes, &c.—Strong and weak side of border—Direction of border—Corners and their influence upon design—Circular and concentric borders.

A BORDER may be described as confined always within fixed marginal (usually parallel) lines which, whether expressed or understood, determine its depth or breadth. The pattern of it is repeated lengthwise only.

This would seem to simplify the problem of design by just one half. But it is not so. There are considerations, such as the necessity of turning a corner, which make the task by no means so straightforward. And, then, the comparative narrowness within which borders are confined and the very simplicity of the lines into which they naturally fall, make it difficult to invent anything new. It seems almost as if everything that was worth doing had been done already and nothing remained to us but to echo it.

These very circumstances, however, enable me to give something more than the geometric ground plans of border design, and, in fact, to survey the various types of border which have been built upon them.

The term border is fairly comprehensive. It may be taken to include frieze, pilaster, and framing patterns generally. Some of these are of individual importance, and may



219. DIAGRAMS OF FLOWING AND BROKEN BORDERS.

rightly claim prominence in a scheme of decoration; they are, if not precisely the picture, interesting incidents in it. A border in the narrower sense is, however, as a rule, at best a frame, and steps out of its place when it attracts much notice to itself. The simpler it is the better. It is just the simplest borders which are most difficult to design. The mere adjustment of parallel lines to the framing of a drawing wants tact and taste. "You can always tell a designer by his borders," said an artist to me once, himself distinguished in design.

With regard to the actual planning or setting out of border patterns there is not much to be added to what has already been explained in reference to the construction of repeated pattern generally. In so far as merely geometric recurrence is concerned the problem is simplified—reduced, as before said, to a pattern which repeats lengthwise only. Borders, therefore, simple or elaborate, are built on lines already described; and here again the tendency of those lines will be to reveal themselves in the recurring pattern.

The direction of a border—horizontal or upright, whether



220. CROSS LINES.



221. STOPS.

it frames a panel or runs round a circle—is a question rather of detail than of planning. Still to some extent it affects the plan of the design; for, though potentially the same lines will serve in any case, practically they will not; for the position of the border will determine always which of the possible lines are appropriate.

Conditions applying to borders generally are: that they should be simple, that they should repeat at no very long interval, that they should lend themselves to satisfactory management in turning a corner. A short interval of repeat has, over and above the economy obviously effected by its means, two clear advantages: it steadies the effect, and it facilitates the adaptation of the unit of repeat to two or more lengths—a necessity, continually occurring, which in itself complicates the scheming of border design.

There are, broadly speaking, two descriptions of borders, those in which the lines run *with* the margins, and those in which they *cross* from one to the other (219). These two systems may be, and often are, combined. The flowing border may be bridged at intervals; the lines between the steady features in a broken pattern may run on; but, practically, it is usually the business of a border either to flow smoothly or to stand steady; and the first thing the designer has to do is to make up his mind which of these it shall do.

If any classification of borders is possible, it is into flowing, growing, waving, "fret," spiral and other *continuous* borders,



222. RUNNING LINE AND FRETS.



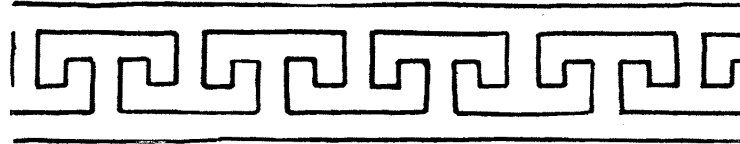
223. GREEK FRET BORDER.

and into "stop," "block," "turnover," panel and other cross-ways or *broken* borders, upgrowing as it were from the margin. It is no use attempting to group them as leaf, rosette, "honeysuckle" borders and so forth, according to their detail: there is no logical end to such description. Besides, detail affects construction only in so far as there must naturally be consistency between the two. And here perhaps a word of warning may not be amiss. Though certain forms of detail happen commonly to have been found in association with certain lines of construction, that fact, while it may serve as a sign-post or a danger-signal to designers new to the road, should not be regarded as in any way a barrier against possible new departures in invention.

Of all conceivable borders the simplest is a line. Next to that comes a series of lines; and here begins design—if it did not begin, before that, with the determination of the thickness of the single line. To apportion the width of parallel lines and their distance apart is already an effort of artistic judgment, as will be at once admitted if we take those lines to represent the light and shadow given by a series of mouldings.

The elementary form of broken border is where cross lines occur at intervals (upright in a horizontal border) as (220) on page 213.

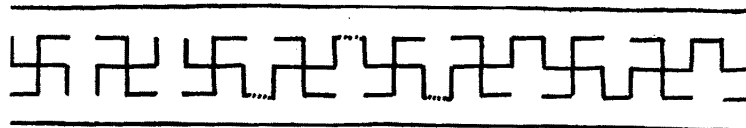
Groups of cross lines or any simple spot, patera or other pattern (221) at regular intervals give what is conveniently described as a "stop" border.



224. FRET FACING BOTH WAYS.

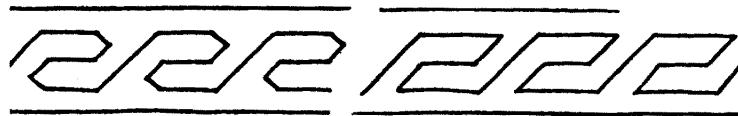


225. INTERRUPTED FRET FACING BOTH WAYS.

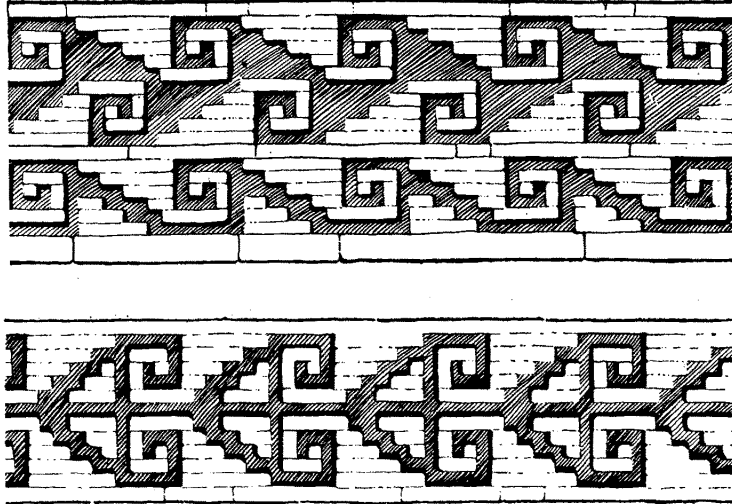


226. SWASTIKA AND BROKEN CHINESE FRET.

From the straight line pattern (221) it is but the shortest of short steps to the running border below it (222) which brings us to the *continuous* group, of which the fret, simple or elaborate, may be regarded as the full development. The fret is too important a form of border to be passed over. Whether it is to be regarded as an angular and rectilinear form of the symbolic wave or as a pattern begotten of the mechanism of basket plaiting, and how it happens to be found among Chinese and Mexicans, among Greeks and Fiji islanders—it is not here the place to inquire. But the degree of refinement to which it was carried by the Greeks makes it impossible to overlook it.



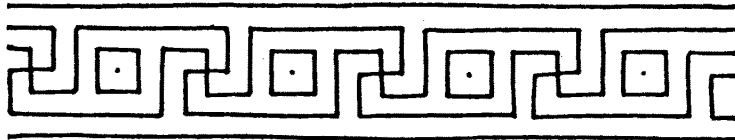
227. MEXICAN FRETS.



228. MASONRY FRETS FROM THE TEMPLE AT MITLA IN MEXICO.

It is mere futility, of course, to copy the Greek fret and think you are designing, but it remains a "motif" which the ornamentist cannot afford to leave out of account. The fret has qualities of balance, flatness and simplicity, of monotonous rhythm, of reticent yet sufficient strength, which make for many purposes a quite perfect border. It says something for it that the Greeks thought it worthy of so much attention, and, having perfected it, were content to go no further.

It is seen to most advantage in its comparatively simple forms, and when it flows in one direction. It is less happy when it faces both ways (224, 225) or is broken and disjointed



229. GREEK FRET INCLUDING STOP.

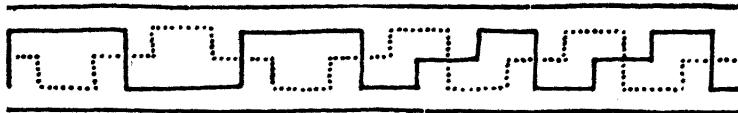


230. FRET SATISFACTORILY BROKEN.



231. WAVE SATISFACTORILY BROKEN.

in the manner characteristic of the Chinese derived as may be seen from the mystic swastika (226). It is unhappier still when, as in some Mexican varieties (227), the lines are at any but right angles one to another. The masonry patterns, for example (228), from Mitla, in Mexico, are very interesting, but have no claim to Greek perfection.



232. TWO WAYS OF ARRIVING AT SAME FRET.

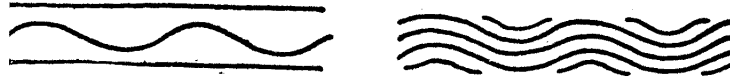
Should the fret include a "stop" of any kind (225, 229), it is better that this feature should take the square lines uniform with the key. Elaborate frets in two or three tiers or stories, such as the one framing the central patch or panel in the Roman mosaic panel on page 246, have their place, perhaps, but it is quite an exceptional one.



233. FRET AND ITS EQUIVALENT IN FLOWING LINES.



234. DEVELOPMENT OF WAVE SCROLL.

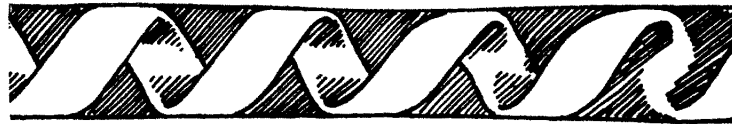


235. WAVE LINES.



236. ZIG-ZAG AND DOUBLE ZIG-ZAGS.

One form of "broken" fret may be classed among the most satisfactory; but then it is hardly broken (230), for, though the painted lines stop short, there have only to be added marginal lines, and, if these are reckoned as part of the pattern, the *ground space* gives the necessary continuity. This applies no less to the corresponding form of wave

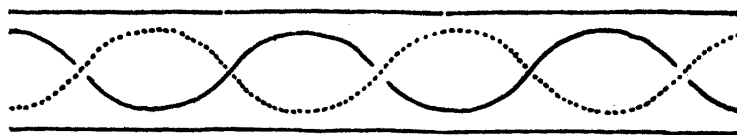


237. FROM CHEVRON TO WAVE.

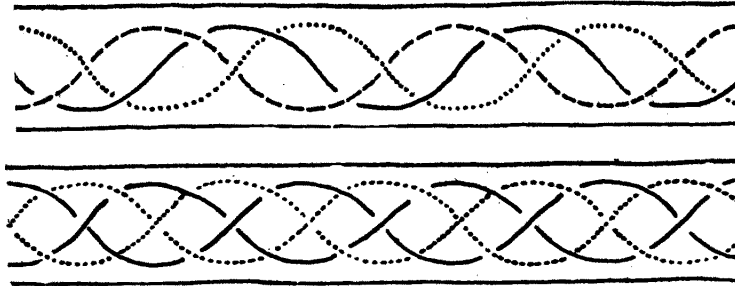
pattern (231) in which the line is not continuous, again a perfect border pattern.

It is as a painted pattern that the fret is most satisfactory. In carving, one set of lines, the vertical or the horizontal as the light may determine, are emphasised by strong shadows in such a way as to distort the design.

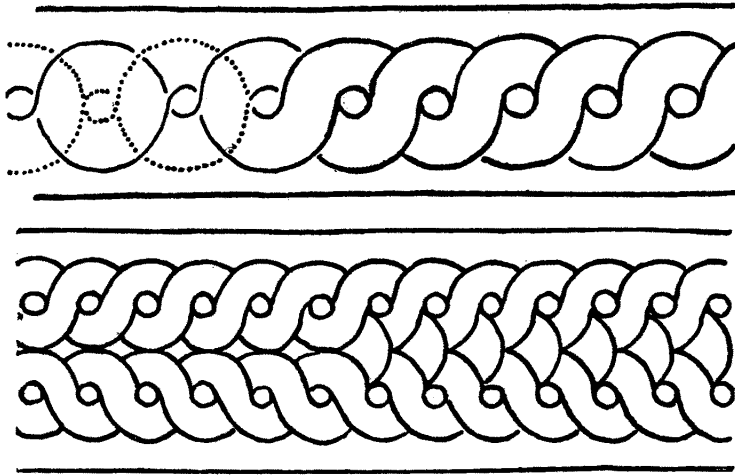
Some artistic prejudice against these right lined borders is



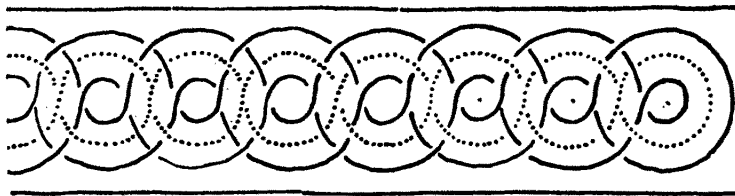
238. TWIST CURVILINEAR EQUIVALENT TO 236.



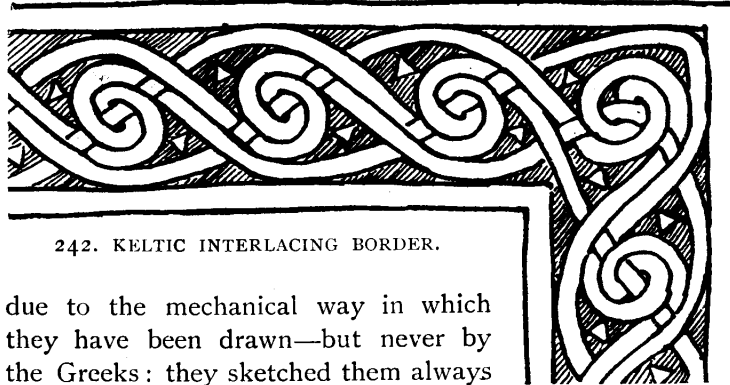
239. PLAITS OF THREE AND FOUR STRANDS.



240. GUILLOCHES AND THEIR CONSTRUCTION.



241. TWIST OF THREE LINES.



242. KELTIC INTERLACING BORDER.

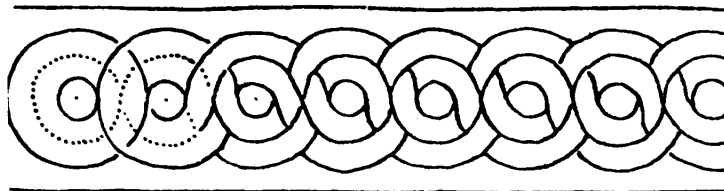
due to the mechanical way in which they have been drawn—but never by the Greeks: they sketched them always with a delightfully free hand—a very different thing from a careless or incompetent one.

A fret pattern is most easily planned on a trellis of vertical and horizontal lines, which form really the square basis of its construction.

The continuous or successive lines upon which interlacing fret patterns may be built up are indicated in diagrams 230 and 232.

Just as the fret (230) may be regarded as the rectangular form of the overturning wave pattern (231) or *vice versa*, so the rectangular and flowing patterns below them (233) are two versions of the same thing; and the waves below these (234) will be seen to correspond with the right lined patterns in diagram 222.

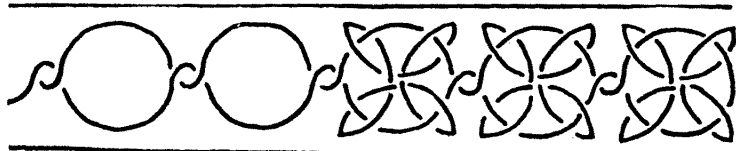
Another rectangular form of the simple wave line (235) is the chevron or zig-zag (236). The development of the



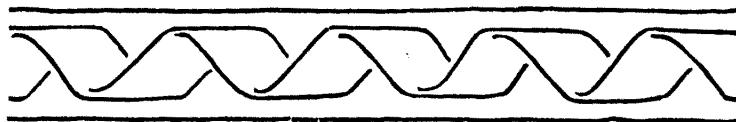
243. STRAP PATTERN ON THE LINES OF 241.



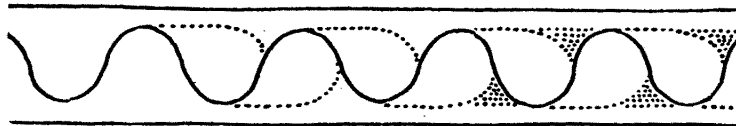
244. CHAIN PATTERNS.



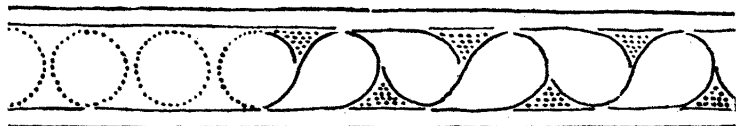
245. BORDER OF ORNAMENTAL LINKS.



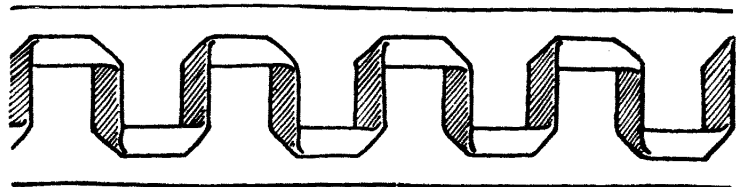
246. WAVE STRAP DERIVED FROM ZIG-ZAG.



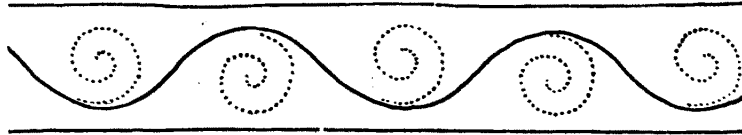
247. WAVE STRAP DERIVED FROM WAVE LINE.



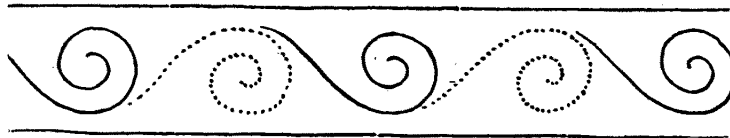
248. WAVE STRAP DERIVED FROM CIRCLES.



249. BENT STRAP—TRANSITION FROM RECTANGULAR TO WAVE FORMS.



250. SPIRALS ADDED TO WAVE LINE.



251. CONSECUTIVE SPIRALS GIVE WAVE LINE.

zig-zag band into the crested wave pattern is indicated in diagram 237.

Two series of zig-zags result in the diamond (236), and give the angular equivalent of the double wave or twist (238).

A third wave and a fourth (239) give us the beginning of the plait.

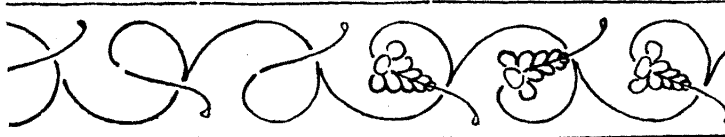
How that develops into guilloches is shown in diagram 240—the lower one of which, it will be seen, is not a plait of four but two twists of two strands each, placed side by side, and connected only by scale-shaped features designed to mask the gaps between and complete the effect. The result is certainly mystifying, and was no doubt meant to be so.

If we regard the circular lines on which diagram 240 was set out, it will be found that they give us a double twist.

The addition of yet a third twist gives an interesting and intricate-looking interlaced pattern (241), the basis, in its turn,



252. CONTINUOUS SCROLL POSSIBLY DERIVED FROM BRANCHING SPIRAL SCROLL.



253. EFFECT OF BREAKING ACROSS THE RUNNING LINE.



254. EFFECT OF FILLING IN SPANDRILS IN COLOUR.

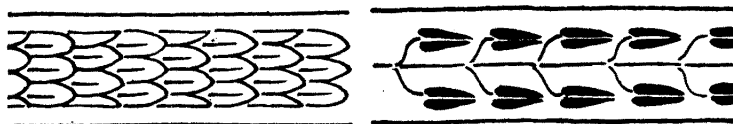
of a strap border (243) not, indeed, so perfect as the guilloche, but more honestly come by.

Instances of less obviously geometric interlacing occur in Keltic ornament (242), delightfully intricate at times, but, however mysterious, coherent always, to be traced, that is to say, by any one who has the patience, through all their convolutions. Again in Anglo-Saxon or Keltic ornament and its Byzantine original are to be found a variety of interlacing borders in which they are not merely continuous bands that are interlaced, but as it were independent links (245), forming sometimes not so much plaits as chains of ornament.

A simple chain pattern (244) makes rather a poor border: it is weak at the edges—just where it should be strong. Ornamental links, however, can be made to keep in a line with the margins; and they are, if not so interesting as the more flowing interlacings, steadier—which is sometimes an advantage. Generally speaking the most pleasing interlacing



255. LEAVES DESIGNED TO FIT SPACES.



256. PARALLELISM IN BORDER DESIGN.

patterns are those in which the lines are rounded; but straight-lined and angular straps may be quite happily associated.

Merely angular and straight-lined interlacings compare disadvantageously with the fret.

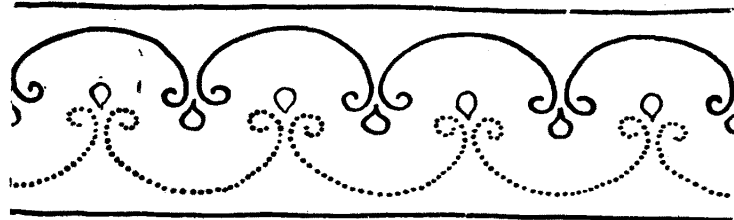
The waving strap already shown in diagram 237 may be evolved equally from the zig-zag (246), from the wave (247), from an array of consecutive circles (248).

A strap bent alternately in the vertical and horizontal direction (249) brings us already, by the softening of the lines at the turnover, in the direction at all events of the wave.

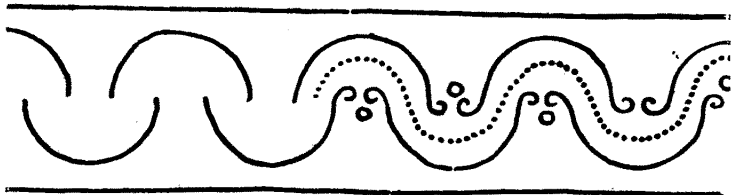
There soon comes a point in the design of the wave pattern at which further development can only take place in one direction, namely, in the way of branching. That is how the spiral scroll occurs. The spirals may be regarded as so many branches from the parent wave stem (250)—though the wave line itself would be the result of putting together spiral branches curving alternately towards one margin or the other (251). We cannot always be sure how a design actually came about; so many roads lead to the same point in design. In the scroll, for example, occurring in eighteenth century design, of which Salembier made constant use (252), the main stem is a continuous line; but it was quite possibly not, in the first instance, designed as such; that is to say, it may very likely



257. BORDERS WITH STRONG AND WEAK SIDE.



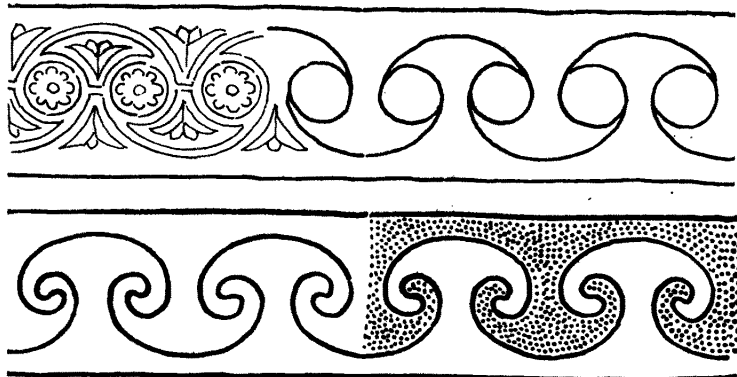
258. BORDER PLAN EQUIVALENT TO DROP REPEAT.



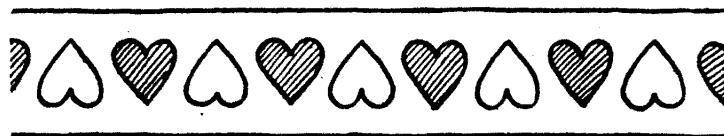
259. SHOWING RELATION OF 258 TO WAVE PATTERN.

be a modification of the familiar branching scroll—as indicated on the diagram by dotted lines.

It is encouraging to the designer to note what a very slight departure from a familiar pattern, such as the simple spiral, makes an appreciable difference in the design. The mere



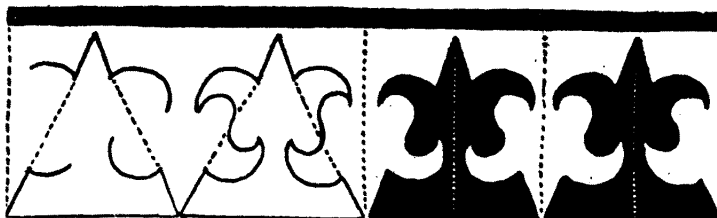
260. BORDERS PLANNED ON THE PRINCIPLE OF 258.



261. PLANNED ON ZIG-ZAG LINES.

crossing of the stem by an elongated feature (253) does something; but the filling of the spandril-shaped ground-spaces with colour (254), makes such a pronounced variation upon the old pattern, that one hardly recognises it at first.

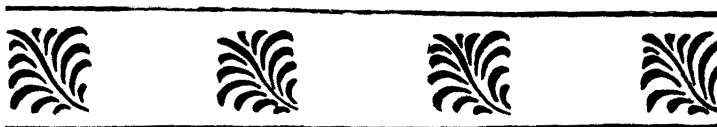
With the development of the branches from the main wave-stem into leaves and flowers occurs a danger—not always avoided even by the Greeks—of the leafage looking



262. COUNTERCHANGE BORDER ON ZIG-ZAG LINES.

too natural for the stem which bears it, or of the line of growth appearing too arbitrary for the leafage upon it. The great mistake is to halt, or to seem to halt, between two opinions. The difficulty is happily solved in Gothic work by deliberately designing leaves to fit the spaces between stem and margins (255).

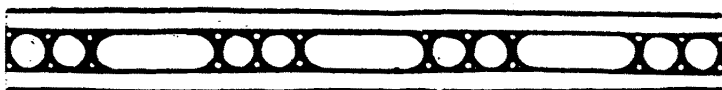
A wave line accentuates, of course, the parallelism of the



263. INTERMITTENT BORDER PATTERN.



264. EQUIVALENT TO CHECQUER IN ALLOVER DESIGN.

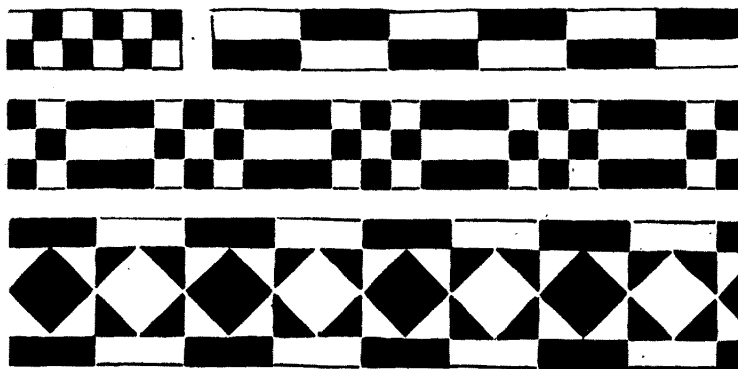


265. ALTERNATING FEATURES.

marginal lines—and this is further emphasised by details running parallel with it and with them as in the case of the leaves on page 224 ; but parallelism is as much a matter of detail as of construction—sometimes even more so (256).

A division in the parallel direction, such as results from a wave or zig-zag line (257), gives an opportunity of strengthening one side of the border by means of stronger colour. The more fully developed wave in the same diagram gives a perfect counterchange pattern.

Another system upon which the unit of a design repeats on both sides of the border, but not opposite, may be compared to the “drop repeat.” The lower part of diagram 258



266. COUNTERCHANGING GEOMETRIC BORDERS.



267. BLOCK BORDER.



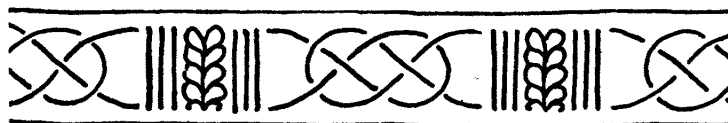
268. BLOCK OR PANEL BORDER.

is an exact turnover of the upper, shifted half of the width of the repeat along. Placed vertically instead of horizontally, it would be described as "dropped" in the turning over.

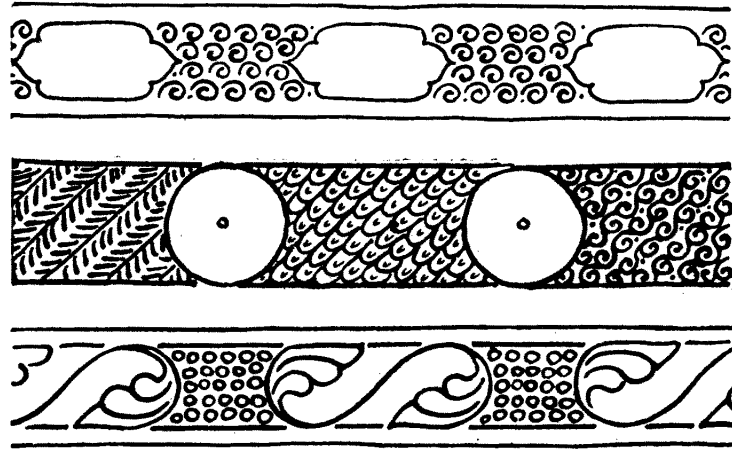
This applies equally to diagram 259, in which the dotted line calls attention to the intimate connection between such patterns and the wave—which might in fact have been its basis.

The relation of the two borders in diagram 260 one to the other, and to the simple wave, hardly needs pointing out.

Another equal-edged border (261), equally capable of being strengthened on either side, is plainly planned upon the zig-zag, which may be regarded as the constructional basis of counterchange patterns such as that given in diagram 262. This is clearly devised upon the diagonal lines of the zig-zag, though it repeats also upon the dotted upright lines. The upright tendency gives it the effect, no longer of a flowing, but of a steady pattern; and we arrive at length at a form of pattern which turns over undisguisedly on lines at right angles to the margins. From this to the interrupted or broken



269. CONTINUOUS LINES AS IT WERE DISAPPEARING BEHIND UPRIGHT FEATURES.



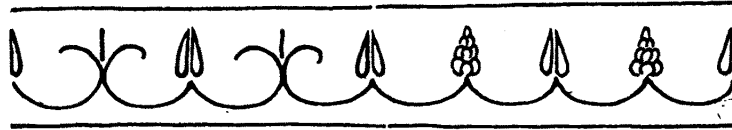
270. ORIENTAL USE OF DIAPERED INTERSPACES.

borders which form, as I said, a class distinct from the flowing, is only a step.

There is first the intermittent border (263), which makes not even a pretence of continuity, the unit of design recurring at set intervals with plain space between. It is among borders what a sprig pattern is among diapers. A yet simpler form of broken border is that in which the space is broken up into equal areas alternately light and dark (264)—equivalent of course to the checquer in allover patterns.

Barely one move further and we get alternate spaces filled each in a different way (265), the contrast being no longer between the masses of light and dark or ornament and plain ground, but between simpler and more elaborate features. Geometric borders of the kind illustrated in diagram 266, counterchanging as it happens (compare 264), are exceedingly useful both because of their steadiness and of their modesty.

Some of the borders last illustrated are, as it were, cut up into blocks. One very useful device in border design is simply to break the plain band with blocks of ornament

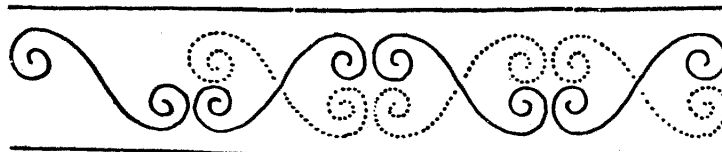


271. CRESTING PATTERN.

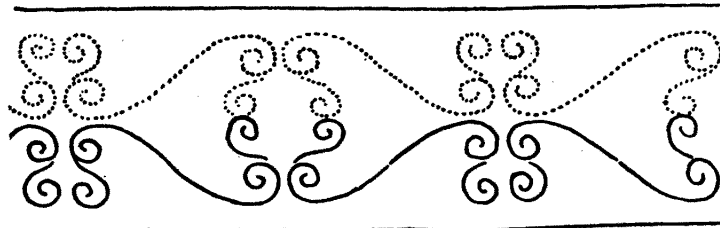
272. CRESTING WITH ∞ SHAPED SCROLL.

(rosettes and what not) at regular intervals. Or it may be the parallel lines of mouldings, &c., of which the flow is interrupted (267). This occurs commonly in Gothic architecture. It is a plan frank to the point sometimes of brutality, but not necessarily brutal—witness the border of cherubs so dear to Andrea della Robbia.

The "block" in its severest form is a sort of panel in small (268), and the panels included sometimes in a frieze design may be regarded as magnified blocks in it. In either case the idea is to provide stopping points and so steady the effect.

273. ∞ SHAPED SCROLLS ON ZIG-ZAG PLAN.274. ∞ SHAPED SCROLLS ON ZIG-ZAG PLAN CROSSED BY THEMSELVES.

The use of something of the kind is very apparent when it is remembered how much it simplifies the difficulty of turning a corner, and how easily the distance of the blocks apart can be regulated, so that there is no occasion to contract or spread out the ornament to make it fit unequal spaces. Plain space or lines of mouldings or mere diaper may be ruthlessly cut short; but it is only quite the lowest organisms of design which will bear such mutilation. Continuous lines interrupted by blocks have often the appearance of running behind them (267 and 269). In the case of a fully developed pattern like the



275. BORDER DESIGN TURNED OVER IN EACH DIRECTION.



276. BORDER GROWING ALTERNATELY FROM EITHER SIDE.

fret (223) it would be cruel to mutilate it; the stopping places must be accommodated to the running design.

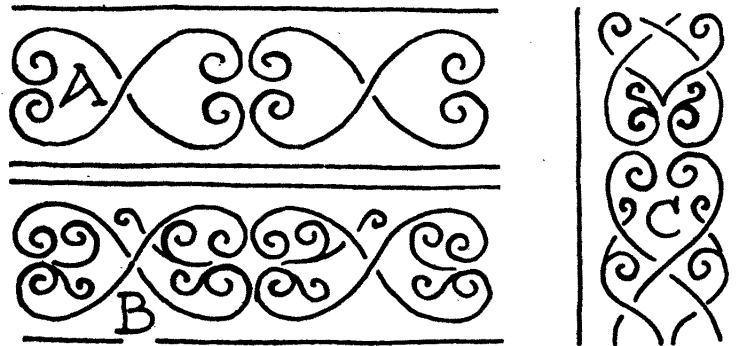
When a border is made up of alternating blocks (268) say of freer and more formal design, it is not easy to say which may have been the starting point. In the diagram (270) on page 230 mere diaper assumes exceptional importance, and the panel, stop, or block takes almost the aspect of background.

A sure way of stopping the flow of a border is, not merely to introduce lines crossing it, but to make the pattern *turnover* on those lines as in diagram 271, where the wave becomes a

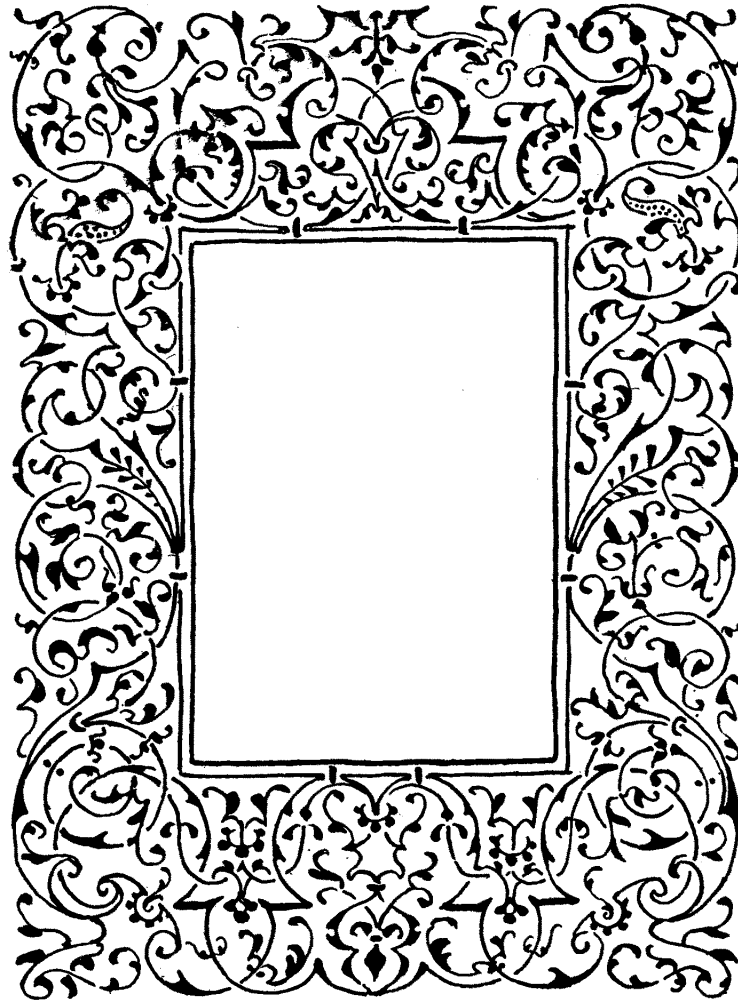


scalloped stem bursting into bud. In diagram 272 the ∞ shaped scroll, itself made up of two inverted parts, turns over on itself, and forms the base line from which upsprings a bi-symmetrical growth. We have here a typical form of construction especially useful where the repeat is necessarily short. But the ∞ shaped scroll does not lend itself readily to foliation, unless we abandon the principle of growth—a departure from nature unpardonable in proportion as the detail of the foliage approaches to the natural.

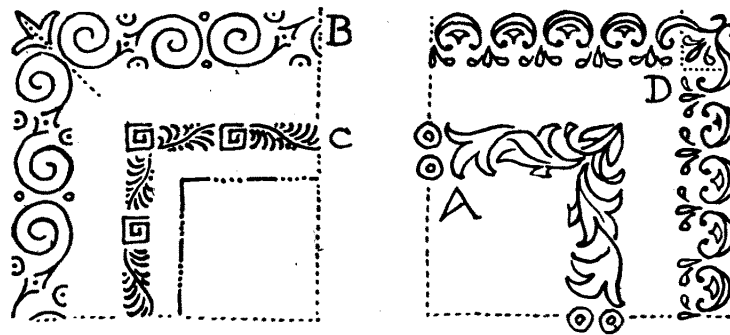
The ∞ scrolls have only to be planned on the zig-zag (273) to give a border of which each margin is equally pro-



278. THE PLAN OF THE BORDER IN RELATION TO ITS DIRECTION.



279. FRAME DESIGN, THE PATTERN TURNED OVER BUT OTHERWISE NOT REPEATING.



280. THE BORDER IN RELATION TO THE CORNER.

nounced. That is even more plainly the case when the zig-zagging ∞ lines are as it were crossed by themselves, which brings the plan very nearly to the twist (238) equivalent to a diamond lattice. If the depth of the border allows it, the design can, of course, be turned over on a line midway between the margins (275).

Yet another plan is, as it were, to turn over (but not opposite) a design which grows from one of the marginal lines. This amounts to the same thing as a pattern growing alternately from either margin (276).

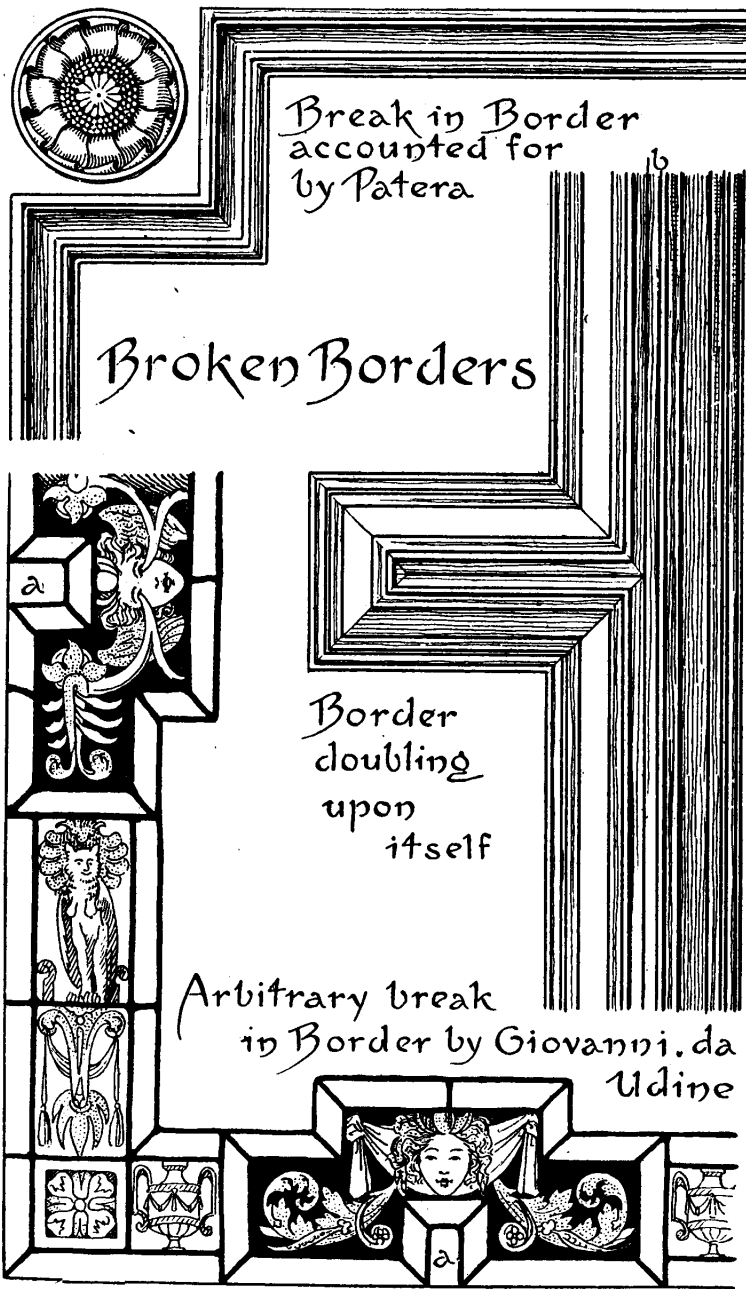
It has been assumed, thus far, that a border is enclosed within marginal lines. That is sometimes not the case; but enclosing lines are understood, if not expressed; the design acknowledges its confines; otherwise it would hardly fulfil the function of a border or a frame. A frame is of course a border, the inner line of which is often more strongly marked than the outer. Another form of border which emphatically acknowledges one margin or boundary line is a cresting. Fringes again, valances, and scalloped edgings depend on one margin for their rigidity. All such borders are strong on the side from which they grow or hang, weak on the outer edge, though such weakness may be to some extent counteracted by weight of detail on that side and by acknowledgment of

the straight line (277). The softening and weakening of effect of a fringed outline needs no pointing out. Even in the case of a border within double marginal lines the strong side is naturally (but not inevitably) that from which the pattern grows.

It is not so much the construction as the detail of a border which is affected by its position—upright like a pilaster, or horizontal like a frieze; but the lines of growth naturally depend to some extent upon its direction. Here again the lines possible may be quite inappropriate to the situation. The scrolls, for example, shown at A in diagram 278 might eventually launch out in the manner shown at B or C according to the horizontal or vertical position of the border. Still there are very clear reasons for the choice, let us say, of a flowing scroll for a horizontal border, and for a central upright for a perpendicular one. In fact the central stem in a horizontal border needs almost to be waved; in an upright one it often needs to be straight or nearly so.

It stands to reason that borders which have to turn a corner must be designed to turn. A flowing pattern such as a fret or a wave scroll naturally runs round (242). But it need not. It may be schemed to start from the centre of the strip and meet at the corners—or to start from the corners and meet midway between them. It may start, again, in the centre of the lower border and meet in the centre of the upper one as in diagram 279, one half of which is a turnover of the other. This hardly amounts to repeated pattern. It may seem a simple thing thus to sketch a pattern freely without heed or hindrance of repetition, but it is no slight tax upon the designer's faculty of distribution. For, either the design must be quite equally spread, so as to give very much the value of a tint, or else some leading lines and points of emphasis must be determined, and this, without orderly distribution, is not an easy thing to do.

It has been shown already that borders which do not flow



Break in Border
accounted for
by Patera

Broken Borders

Border
doubling
upon
itself

Arbitrary break
in Border by Giovanni. da
Udine

present in some cases little or no difficulty at the turning points. Except where there is a feature in the design which just occupies the corner (a "block" for example—280, C) a framing border has necessarily to be planned with a view to the happy modification of the unit of repeat at the corners.

In determining the dimensions of the repeat, the length of the border or borders, into which it must divide, may be reckoned, either from the line which marks the mitre at the corner (280, B), or from the cross line where one border would intersect the other (280, D). The design may turn over at the corner on the diagonal or on square lines.

The shorter the border, the more important becomes the consideration of the corner. That may be the starting point of the design. Indeed it may constitute the whole design, which then turns over both upon the diagonal mitre lines and upon the upright and horizontal lines which would divide the panel into four equal parts (280, A). Apart from the corner, there may be breaks in the border, as shown on page 237, which (unless it is of the simplest lines merely) have naturally to be taken into account in its design. A break in the border is sufficiently accounted for by a patera or some such device to be evaded. The deliberate snipping out of spaces, as at *aa* (281), so as to form gaps round which to bend the border and thus break the sequence of straight lines, needs some justification. Da Udine adopted it in the windows of the Certosa near Florence.

A circular border presents no more difficulty than a simple strip of given length: the length of the repeat is at the discretion of the designer: he may divide the space into any number of equal parts. The design may be constructed on radiating or on flowing lines or on both.

In the common case of a series of concentric borders, the two systems may conveniently be used to counteract one another—the radiating lines are of course steadier. Flowing borders may flow, if need be, in opposite directions. As a rule

it is well, however, that there should be some relation between the repeats of concentric borders—at all events where the repeat is apparent. They need not by any means be of equal length ; but they should divide one into the other.

The plan of a pattern (border or filling) influences or is influenced by the detail of its design. The one is bound up with the other. In settling a plan, one thinks of the detail to come ; in determining detail, one bears in mind the plan on which it is to be distributed. But there is no rule to be laid down excepting that of consistency.

It will be found that certain lines of construction are in accord with certain forms of ornament. Rigid detail goes with formal geometric lines, relatively natural foliage with free growth ; and between those two extremes there are infinite gradations from severe to formal treatment, determining, or determined by, the lines of distribution.

But neither Arab on the one hand nor Japanese on the other, neither Greek nor Goth nor artist of the Renaissance, has settled anything for us beyond the necessity of correspondence between detail and its distribution.

How to do it is our affair : we have the experience of the past to guide us ; but to adopt just what has been found to answer well enough is the last shift of laziness—if it is not mere dulness. The happy conjunction of this detail with that construction is evidence of *their conformity* only, not of the incongruity of other combinations personal to the artist. It is possible to fry without bread crumbs.

XVIII. PATTERN NOT STRICTLY REPEATING.

Balance of design—The decoration of a space or panel—Mechanical subdivision not the way an artist sets to work—Measurement by the eye—Panelling—Composition—The border—Attacking a panel from the outside and from inwards—Borders inseparable from the filling—Diaper conforming to the conditions of a panel—Rules of composition not to be laid down—Delights of daring—Charm of order—Systematic construction of pattern—Artistic anarchy.

OF pattern not strictly repeating there is less to be said, and would be practically nothing to say were it not that there is often repetition in it. That is where the geometric element comes in—and the occasion to discourse of order. The balance of ornament not subject to repetition is so entirely a question to be determined by the eye that, even were it possible, it would serve no purpose to lay down rules and regulations to be observed in its composition. However, in so far as there is repetition in it, it needs to be discussed.

Given, then, a surface to decorate, not with repeated pattern, but with ornament in which there is repetition—how to set about it?

Let us take for our surface a rectangular space or panel. The shape and proportions of this typical space are either satisfactory, or they are not. In the one case the artist should be careful not to disturb the satisfactory condition of things. In the other it is his business to amend or correct. This is precisely the province of ornament.

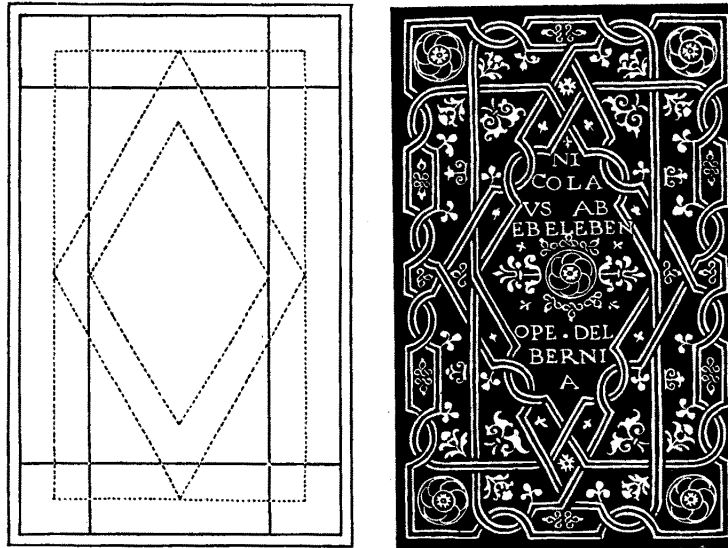
There is a simple way of covering a surface with pattern which has too readily been accepted as sufficient. To divide it into quarters, and these again into quarters, and so again,

and perhaps again, until you arrive mechanically at subdivisions small enough to form the ground lines of a harmless diaper, is not so much to plan a design as to shirk the responsibility of invention. The ground plan that "happens" is not greatly to the credit of the artist. And that is not, in fact, the way an artist sets to work.

Geometrically planned pattern may be the very thing; but the designer will find it expedient to consider, before he begins, the proportions of the space with which he has to deal; and will subdivide it into divisions which are not necessarily quarters, or quarters of quarters, or quarters of quarters of quarters. The given area will itself suggest to him its subdivision into twelfths, or thirtieths, or parts of subtler proportion, determined, in the first instance, not by measurement but by the eye. Afterwards he will find it a saving of time to measure them and set them true. A diaper should naturally have reference to the space it is to occupy. It should not be casually designed and recklessly cut short, but neither should it be *mechanically* proportioned to it.

Such subdivisions are commonly but the ground plan of design, only to be traced by those conversant with pattern construction; but they may be, and often are, conspicuous parts of the pattern. It is convenient thus to divide an area of considerable extent into sections, each of which becomes in turn the subject of consideration—to be decorated or not, as in the case, for example, of panelling, where the panels (for the most part bordered with mouldings) are some of them left plain, some enriched with ornament. This may either run through them and connect them, or it may be confined within the limits of each separate panel into which it enters.

When we speak of the "pattern" of a panel it is very much as a painter sometimes speaks of the pattern of a picture, to express what amounts practically to *composition*—a matter by no means of rule but of artistic instinct. We look at a panel and find it too long or too short. Instinc-

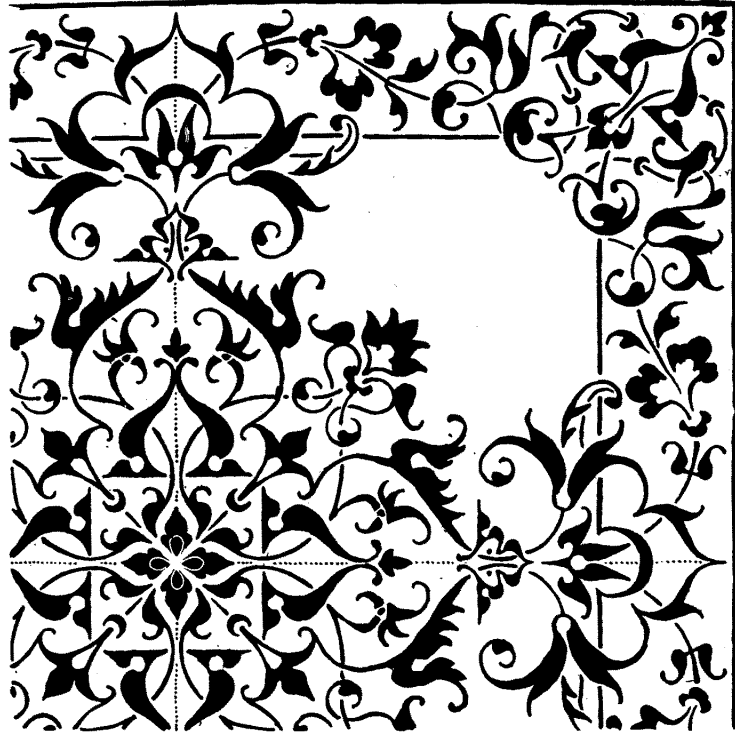


282. BOOK COVER IN WHICH BORDER AND FILLING DESIGN ARE INSEPARABLE.

tively we lessen its apparent length by lines in the horizontal direction, or add to it by upright lines in our composition. Or by a judiciously measured border we call attention to the more satisfactory proportions of the inner space.

A border may be all the pattern that is wanted. For by the introduction of it we do not merely lessen the area to be filled, we fill it perhaps sufficiently. It is wonderful what a mere border will do. But the due proportioning of it is not to be prescribed—it must be felt by the artist. And it need not be all of one width, nor yet confined within rigid marginal lines.

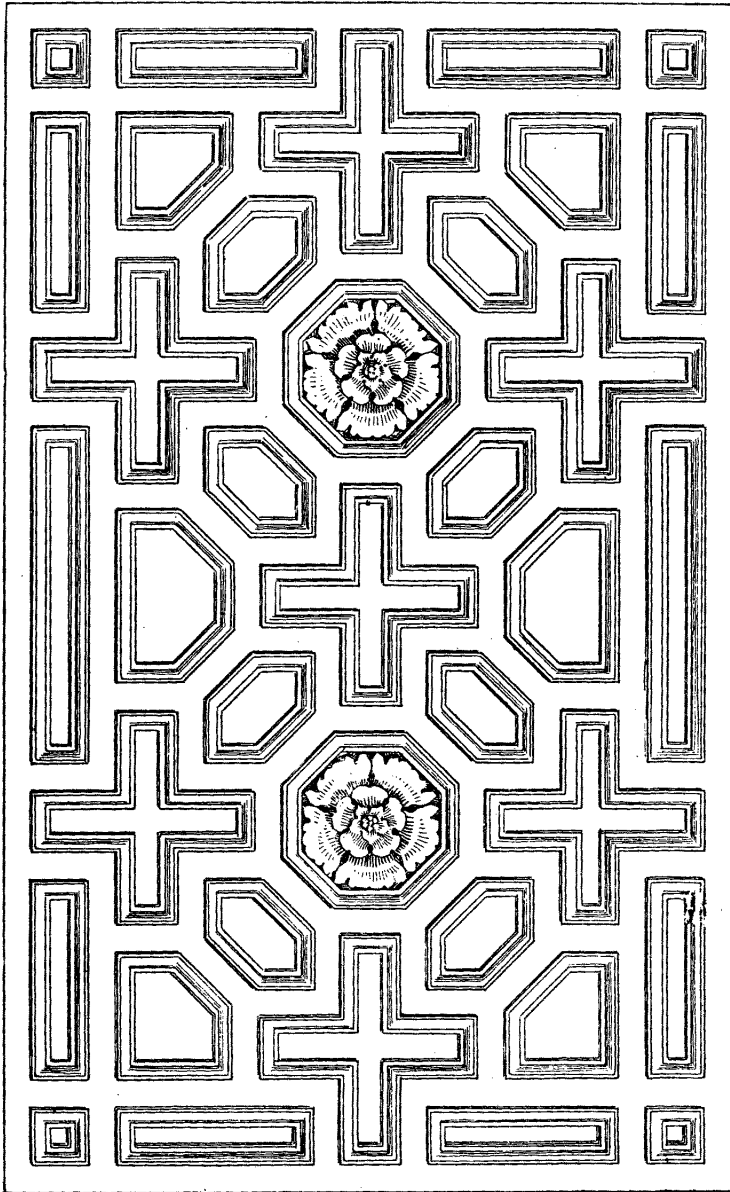
There are roughly speaking two opposite ways of attacking a panel—from the outside or from inwards. You may begin, that is to say, with the border and creep cautiously inwards, or you may boldly plant your first blow in the centre space



283. CENTRAL ORNAMENT GROWING OUT INTO BORDER.

and let the design spread outwards to the margin. How far the border itself extends inwards or the central ornament outwards, it is again for the feeling of the artist to determine. A strong border may call for an emphatic feature in the centre of the field to keep it in countenance; a heavy central feature may insist upon support.

The border may flow over from, or flow into, the space it surrounds. It may be so mixed up with the filling pattern as to be inseparable from it. It may exist, that is to say, only as part of the filling. There are patterns in which it is difficult to say where the border begins, still less whether the designer



284. JACOBEOAN PANELLING—MORE OR LESS A GEOMETRIC DIAPER.

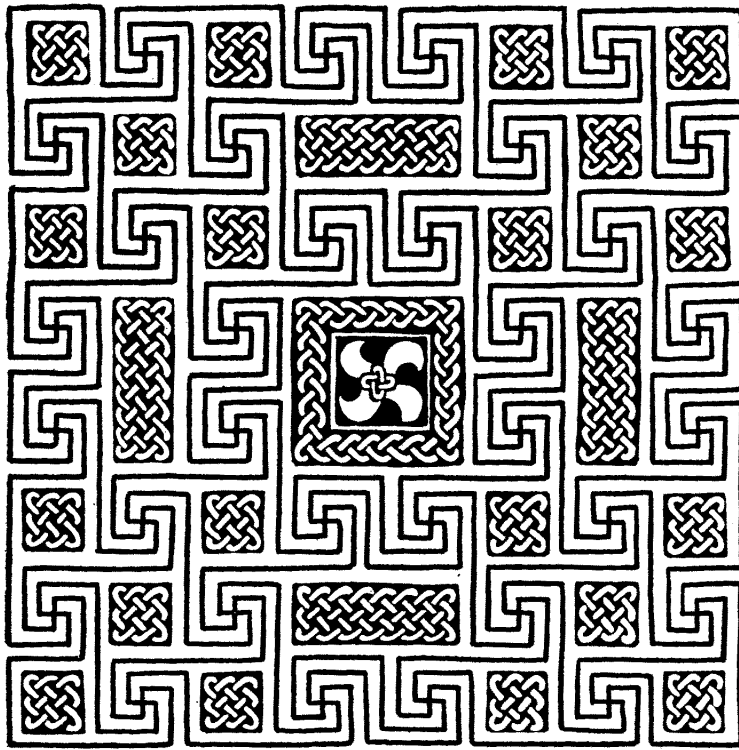
began or ended with it. All that is certain is that he did mean to frame in his panel or whatever it might be.

So too there are repeating patterns which at the margins take slightly different form, so as not to be cut off, and which are gathered together at intervals, and especially in the centre of the panel, so as to become not so much repeating pattern as panel design in which there is repetition.

An example of border and filling so closely knit together as to be dependent one upon the other occurs in the book-cover (282) on page 242.

There are indications of two borders, a broader and a narrower, corresponding to the dimensions of the diamond shapes which form the central feature; but neither of them is perfect in itself—the strapwork is so twisted together that to unwind it would be to do away with the design. It is tolerably clear how the designer must first have set out border lines and lozenges (which he happened to begin with, it would be rash to conjecture) and upon them schemed his strapwork, content in the end to suggest rather than actually to define bordering.

In the Niello pattern (283), where the central arabesque grows out into the border, it would be safe to say that the border lines were first set out, and that the overflowing of the central device into it was an afterthought—as was the break in the inner marginal line, and the way it accommodates itself to the ornament. The border, if such it can be called, in the Jacobean panelling opposite (284) is yet more essentially a part of the filling pattern. One hardly knows whether to say that the border line here is broken into by the cruciform panels, or that the long marginal panels make good the intervals between the arms of the crosses. In any case the border (such as it is) and the diaper are one. The design consists, in fact, of what is practically a diaper pattern, focussed in the central octagons by rosettes, and finished off at the edges so as to give a sort of border—which may have come about



285. ROMAN PAVEMENT—MORE OR LESS GEOMETRIC DIAPER,
RESOLVING ITSELF INTO A BORDER.

without deliberate forethought of any such thing by the designer.

The Roman pavement pattern above (285) may be described as consisting of a very broad border framing a very small panel. But it may equally well be regarded as a diaper pattern gathered together in places, and finished off at the edges so as to result, more by accident than of set purpose, in a central panel with a broad border, enclosing within it smaller spaces again.

The relation of these "patterns in which there is repetition" to "repeated pattern," discussed in earlier chapters, is apparent enough.

A point to be observed is, that in none of these last designs would the results arrived at have been reached, but for the planning of the pattern in the first place upon the geometric lines insisted upon in the case of repeated ornament. The rules, therefore, which govern repeated pattern, though no longer applying to pattern in which repetition merely happens to occur, have still a bearing upon it.

In discussing repeated pattern it was possible, and even necessary, to be somewhat dogmatic as to the lines of construction—they are practically compulsory. In pattern not repeating there is no such compulsion: rules of composition cannot be laid down; or, if they can, it is not necessary to follow them, perhaps not desirable to do so. All that the teacher can do is to point out safe lines of conduct and the danger of overstepping them. He will not, if he is wise, insist too strongly upon their observance. We must risk falling if ever we are to run alone. We learn by experiment. And then there is the charm of danger. Who does not like to take his chance? Art would be no congenial pursuit for a live man if he could not indulge sometimes in the luxury of running a risk. The sum of all one has to say about restraint amounts to little more than this: that a man should think before he ventures, look before he leaps, weigh well the odds before he wagers his artistic success.

Admitting, however, all the delights of daring and of freedom, there is a charm in order too; and a designer not susceptible to the charm is scarcely in his element in pattern construction. Experience goes to show that satisfactory design, seemingly quite unrestrained, is, when we come to examine it, systematically built up. Many a time the underlying system is frankly confessed—and the confession wins at once our sympathy and ready condonation of some

departure from it. It is as though the artist said in the lines of his design: I claim my freedom, but I have due respect for law and order. And we like him the better for it.

But, though it is refreshing to find an artist, not afraid of disturbing order upon occasion, the occasion should be something more than just impatience of restraint. We live in days when it is as well to be on our guard against a spirit of anarchy, which takes at times possession of us, inciting us to repudiate not merely outworn laws—the best of laws wear out in time—but the very need of any law at all. The old ideas of art may need reform, revolution perhaps—though in the last quarter of a century we have made, for good or ill, great strides towards freedom; but the artistic anarchist, whatever his good intentions, is not working to that end. The reign of anarchy would surely bring with it the ruin of design—the very existence of which is bound up with order.

XIX. EXPEDIENTS IN PRACTICAL DESIGN.

Full-size drawings—Small scale drawings and their use—Methods of drawing—Charcoal—Chalk—Roughing out—Use of blackboard—Designing in colour—in masses—Pencil drawing—Sponging down—Colour designs in colour from the first—Colour as a help in complicated design—Form and colour—Design only a map of form and colour—Precaution against self-deception—The evolution of a design—Tracing paper—Accident—Mechanical helps—Hardness—Precision essential—Body colour—Water colour—Systematic use of mixed tints—Working drawing only a means to an end.

PATTERNS are best designed full-size. The designer, it is true, must learn to work to a reduced scale. It is necessary in order to secure the commission; and if he is in the habit of working always to the same scale, there is not much fear of his misreckoning; but the small scale drawing is useful mainly to save time and labour in setting out the lines, proportions, and repeat of a pattern, before it is determined to take it seriously in hand. It is as well not to carry it too far, nor yet to pledge oneself in it to anything very definite in the way of detail.

A man's method of drawing, and to some extent the medium he employs, will depend upon the kind of thing he is doing.

Charcoal is not a good medium in which to finish working drawings of patterns. It is not merely that it makes a dull and sodden-looking drawing, but that the lines are not precise and sharp enough for practical purposes. To work in charcoal is not fair to the workman into whose hands the drawing is put. How is it to be expected of the engraver to render in

hard wood or yet harder metal what the superior artist found it expedient to leave vague in soft charcoal?

Neither is chalk a very good medium, if, as is mostly the case, it is outline and not modelling it is necessary to express.

But chalk and charcoal answer admirably for the first rough sketch of a design, especially in monochrome. Working in charcoal the designer is not tempted to put in detail prematurely or to niggle over "finish." He can rough in his masses so as to see plainly their weight and balance, and, what is equally to the purpose, he can easily wipe them out again. The knowledge that he can dust it off easily gives him freedom in the use of charcoal; there is nothing more paralysing than to know yourself definitely committed to the line you have put upon paper. A delightful way of starting a design is upon the blackboard. Drawing paper gets ingrained with charcoal, or chalk, or pencil. Even were erasure easier than it is, one is apt to pause before rubbing out what it has taken some pains to put upon paper. Many a design has fallen short of its promise because it went to the heart of the designer to undo his doing. He has no misplaced tenderness for chalk lines on a blackboard. He never hesitates to wipe them out; but does it gaily and without regret. It is a pleasure rather. And he goes on wiping out until he has the design absolutely as it should be, or as he would have it. The medium gives him a sense of greater freedom than charcoal, and his work is proportionately more spontaneous.

It is a simple matter to trace the white chalk drawing on to paper, and either finish it on that, or transfer it to drawing paper. (Failing a blackboard, a piece of common American cloth answers the purpose almost as well.)

For designs in colour the preliminary drawing may just as well be in coloured chalks or pastels. Working on paper, it is a good plan to splash in almost immediately the colour masses, in thin washes, foreshadowing as it were their distribution. One chooses, naturally, colours which can be washed

down to a mere stain on the paper. The main lines and masses settled, you may proceed to sketch in pencil or charcoal the details of the design. If, as is very probable, these have to be rubbed out in part, there is always the stain of colour left to guide you in starting afresh; or out of a number of tentative lines you define the chosen ones in colour. Something of the freshness of the first sketch may be preserved in a drawing begun and finished on the same piece of paper—if only you can keep the drawing clean and sharp enough for working purposes; but that is not always possible. A design in which the masses count for anything is better drawn in mass, not merely in line. It should be designed, that is to say, in colour or in solid black and white—even though it may be necessary afterwards to make an outline drawing (on tracing paper perhaps) for the guidance of the workman.

You may rough out something in pencil, and carry it to a point at which the lines indicate fairly what you mean. But it takes all your concentrated attention to follow them, if they are at all involved (as in a sketch they are very likely to be); and if you have to lay the design aside for awhile, it is not easy, when you come back to it, to take up the thread of the pattern; you may easily have lost meanwhile the very clue to the intention once so definite to your mind. The roughest daubings of colour are relatively easy to follow; they explain much more to you—little as they might convey to others. And if there is a point at which they are vague, it is the simplest thing to put in the lines necessary to show, for example, the overlapping of one shape by another.

In a design blotted in however roughly in colour, you see at once where it is empty or too full, where wiry stalks want thickening or luxuriant details thinning, and can form a fair idea as to the way the notion will work out. It is to be remembered that the masses shown in it will be, as a matter of fact, what on the wall or in the finished fabric will first strike

the eye. You have only to get them right, and you foresee your effect.

A point is often reached in design at which the lines and masses are all right, but the details will not do. It is a good plan in such a case to sponge it down, until only a trace of it remains. The vaguer the forms, the more freely you can go to work in defining them, sketching them perhaps first in pencil or charcoal, and then filling them in in colour emphatic enough to make the superfluous stains upon the ground (left from the original sketching) of little or no consequence.

Designs, then, for colour should be thought out, and are best worked out, from the beginning in colour. It is never advisable to finish a drawing and then first consider the colours of it. They should by rights play their part (and it is a most important one) in the very plan of the design.

Even in design for monochrome, colour may be helpful—more especially if the scheme is at all involved. It is quite a common experience to get so many more or less experimental lines on your paper that it is almost impossible to see clearly what you are doing. In the case, for instance, of two separate but intertwining growths of ornament, it is not always easy to keep in mind which is which; but if they are drawn in two different colours, there is no confounding them. So also a main stem, to be disguised in the finished design by flowers and foliage breaking across it, is kept for the time being sufficiently in mind by a distinguishing tint. By colour, again, flower masses or other prominent features are defined in such a way that you can't help keeping their prominence in view, and realising the patch they make, and the effect of their recurrence. In complicated design some such device is almost necessary to enable the designer to keep the various strands of the pattern distinct—which he must do from first to last, even though he should mean them eventually to be lost in the general woof of the pattern. There must be no confusion in his mind. The one thing needful in design is to

“know what you mean to do, and do it”—and whatever keeps you to the point is helpful. You may with great advantage sketch in the mass you want in one colour and the detail within it in another. The essential forms once for all committed to paper in a colour which may be trusted to leave an indelible stain upon it, you are free to experiment in detail with another which can easily be sponged out.

There is a temptation, against which the artist is not always proof, to get over harshness of line or form by the use of conveniently subdued colour. In dealing with forms already fixed that is often the only thing to do. (See Chapter XVI.) But where the forms are not fixed but remain, equally with the colour, to be determined by the designer, it is an evasion of the difficulty of design. It must not be supposed that when you have designed a pattern which looks well in the colours of your drawing, you have done all that a manufacturer requires of you. On the contrary, what he wants is a design which will work out satisfactorily in half-a-dozen different schemes of colour. The problem is, not so much to design a colour-scheme, as to plan a pattern which will lend itself to being worked out in a variety of ways. To do this you must have clearly in mind the value and function of each particular colour, rather than its hue. You must know, and should be able to explain, which colours are to assert themselves and which to retire, which (if any) are of equal importance, and what is the relative value of each—all this irrespectively of the charms of some one seductive colour-scheme which might easily lead a designer astray from practicality; for from the manufacturer's point of view a pattern depending entirely upon one colouring is not, as a rule, worth producing.

A word here as to the way designs should be presented to the manufacturer.

A sketch should indicate either the design of the thing that is to be or its effect in execution. The artist's aim should be to show what he is going to do, and he should confine

himself to that. Whatever he puts down on paper should go to make clear his meaning. A sketch is a promise, and it should be made in all frankness. Nothing should be done with the mere purpose of making the drawing look pretty. As to the expedient of giving to it charms of colour or effect which the executed work will not have, it is about on a par with showing a sample of goods to which the bulk does not come up. A quite conscientious control of his imagination may possibly cost the artist his pains and lose him a commission. But, what then? Honesty is not a matter of policy, whatever the proverb may say. And, if it were, the only possible policy for an honest man is to go straight. The object of a sketch is to give an idea of something that is to be done. It should give a fair one. A certain vagueness is permissible, on the supposition that the idea has not yet reached a point at which it is possible to be definite, or on the understanding that the working drawing will make all clear.

A working drawing is no longer a mere promise but an undertaking, and a very definite one. It is pledged to tell the workman what he has to do. All that goes to his information is to the good. Whatever does not do that is superfluous—or worse; it may serve to mystify or to mislead him.

A practical designer will therefore not pay much heed to the prettiness of his drawing. As an artist he will naturally present his drawing in such a form as to appeal to the eye. He will draw in firm and expressive lines, will choose his tints with taste, and float them on with dexterity; but that is only by the way; he will not hesitate to disturb the effect of his drawing if by so doing he can amend or improve the design. On the contrary, he will ruthlessly destroy its pleasing appearance, soil his even wash with corrections in body colour, erase, mend, patch his drawing, score it over with written notes of explanation, if only by so doing he can make more sure that there shall be no possibility of mistaking what he meant.

Indeed a very *sweet* production is almost open to the suspicion that it is not a perfect drawing to work from ; for to the ideal working drawing there goes a precision which is apt to be rather hard in effect. The outlines are firmer than they will appear in for example the woven fabric, and the tints (to be blended together perhaps in the general effect of the material) are pronounced with a deliberation which in the executed work would be annoying.

And; then, design is design—that is to say experiment—a seeking for something not always found at the first go off, found perhaps only after many failures, each of which leaves behind it traces not conducive to prettiness.

The designer intent upon design cares too much for its effect in execution to be careful of its appearance upon paper—and will sacrifice all immediate satisfaction to its satisfactory working out. He looks to the end in view and knows his drawing to be only a means to that.

I prefer for example, myself, in designing, let us say, a damask pattern, which in execution will be in two not very distinct shades of one colour, to make the drawing in colour upon white paper—it might even be black on white. The stronger the contrast, the more flagrantly the faults in the design stand out: you see your work at its worst. Make it satisfactory in that pronounced form, and you may be sure it will be more than satisfactory in the not too obviously different shades of a colour—supposing of course (what may be taken for granted when the designer knows his business) that you have all the while in view the relation of the two shades naturally resulting from the process of figured damask weaving. A design on the other hand worked out in very tender tints may blind, not only the manufacturer (whom perhaps it is meant to deceive) but the artist himself, to the defects of his design ; and if, as may happen, it should eventually be woven in contrasting colours, great may be the disappointment.

It may not be politic to submit to the manufacturer a drawing in which the design is seen at a disadvantage; but it is sometimes worth an artist's while to rough out his design in colour contrasting frankly and even brutally with the ground, and only when it has passed muster in that form to proceed to present it in guise attractive enough to please the purchaser. The use of colour (not essential to the purpose of the design) as a bait to catch the incautious customer, is a trick of the artistic trade, the resort to which, it is not unfair to say, implies some doubt of the designer's confidence in the resources of his own invention.

There is no one way of preparing working drawings. Design being what it is, a process of evolution, one never quite knows how it will work out. Mistakes have to be made good, and the making them good may lead to wide departure from the method originally proposed.

Supposing, for example, a design to be unsatisfactory in detail. The natural thing to do is to sponge it down, and work over it again; but if it happens not to come out—it may be convenient to wash over it a deeper colour, just allowing the original lines to show through, and start afresh in body colour, this time, light upon dark—the very reverse of your original intention. If, by the way, a pattern is meant to be printed light upon dark, it is better to draw it at once in body colour upon a deeper ground. There are, it is true, certain kinds of design (full, as a rule) the background to which it is as well to fill in last. But if spontaneity and freedom count, it is false tactics to work from the outline inwards, and especially to outline lines: a line drawn with two strokes instead of one is likely to be relatively stiff. Further, it is not so easy to be sure of forms which you do not see in mass until the background is filled in round them. The surest and subtlest lines are drawn with one sweep of the brush.

It often happens that in a first sketch, done at a white heat, there is something you do not want to lose. In carrying

the design to a finish there is every likelihood of losing it. And yet it is essential that in a working drawing every detail should be precisely defined. The sketchiness which is charming in a sketch has no charm for the man who has to carry it out, to whom in fact you leave the thankless task of doing what you dared not do yourself. A satisfactory compromise is to leave the sketch as a sketch, and to make a finished drawing on tracing paper over it.

In so working there is no fear of undoing what was done. If the drawing does not come right at once, you have only to make another tracing, and another of that if necessary, refining upon refinement until you have done your utmost. And all the while the original in its pristine suggestiveness is there to inspire you. The full use of tracing paper is known only to the experienced. Students are sometimes taught at school not to use it. That is all very well in drawing lessons; but in practical design it is contrary to reason. Certain lines have to be repeated or turned over, and the readiest and simplest way is to trace them. The quality of accidental difference obtained by freehand drawing, charming as it is, happens here not to be to the purpose. It is in fact a drawback. Repeats must fit, recurring lines must be level. To draw them without mechanical assistance is to take the greater trouble to do the thing less well—which is absurd. Any hardness which results from mechanical accuracy can easily be corrected when once the necessary exactness has been ensured.

Moreover in a working drawing a certain degree of hardness is by no means the evil that it would be in a picture. The drawing is here of no account in itself—it is merely a means to an end—absolute precision is essential to its proper interpretation. A vague draughtsman is the kind of genius for whom the manufacturer has no use.

It is impossible to insist too strongly upon the necessity of what I may call plain speaking in practical design. It is the business of a working drawing to explain, not merely to

suggest, the designer's meaning. The design which is not fit to put straight away into the hands of the workman is not so much a design as the promise of one.

The suggestiveness which is charming in a sketch is unpardonable in a working drawing. It is the first duty of the designer to leave nothing vague or undetermined. If his habit is to feel his way towards what he wants, it may be necessary for him to make a new drawing to work from, or to supplement the first by an outline drawing which there is no mistaking. In a working drawing every necessary information must be given, and given clearly. The limits of a tint, for example, (which perhaps in the result will merge into another) must be defined so that there is no doubt as to where it begins and ends.

The theory, true or false, that there are no outlines in nature does not concern the designer. He will find that the man who is to work out his design must have them. You may leave, of course, a good deal to the workman you have educated and can trust ; but you cannot otherwise rely upon intelligent interpretation on the part of the man who comes after you ; and you have no right to expect him to define (as he must if you do not) the lines you yourself hesitated to make clear. If you give any one occasion to spoil your design, it is your fault, not his. Balance against the charm of sketchy drawing the disappointment of seeing it mangled in execution, and you will not hesitate to harden your drawing—to brutalise it somewhat, if need be, rather than that some one not in sympathy with you should perhaps vulgarise it.

So essential to the serviceableness of working drawings is precision, that some manufacturers insist upon their execution in distemper or body colour. The solid medium does make it fairly certain that the boundary of each separate colour or shade of colour shall be definitely marked enough to prevent any doubt as to what is meant. That much secured, there is no valid reason why the designer should not work in whatever

medium is most sympathetic to him—the one over which he has most control, or which best expresses the quality of colour peculiar to the material for which the design is to be made. Distemper gives the effect of wall-paper printing, watercolour gives more the quality of printing in dyes, silk weaving or tile painting; and a design for either of these last in body colour would give a false impression, which might be misleading. There is not the least necessity for showing in a working design the effect of the finished thing, but neither is there any occasion to suggest a quality alien to it. It is not as if distemper were the only means of definition. A wash of colour, it should be remembered, has only to be laid on wet enough, and it dries to a crisp outline—so clearly marked indeed that the designer has to bear in mind that no such line will occur in the printed tint, which may therefore possibly need strengthening. So, too, pencil lines left in the drawing may be misleading, and should be carefully erased.

The danger, however, of an artist's misleading himself is slight compared with his leaving to those who come after him any excuse for going wrong. A designer must not proceed as a painter would, mixing his tints, as he goes along, on the palette, or manipulating them on the paper—he must prepare them before he begins, must keep them separate, and lay them as flat as need be. It does not matter much if they are not quite even, so long as there is no possibility of confounding them. His business is to furnish a definite, intelligible, and even unmistakable drawing. Any possible doubt should be cleared up by written notes even though they deface the drawing. Naturally a good workman likes to turn out a clean crisp drawing; but that is not the point in a design. It is no part of the purpose of a working drawing to look pretty. Rightly considered, it is after all only a means to an end. Neatness itself is dearly bought at the expense of revision which would have done good to the design. A designer intent upon design should not be afraid to wipe out what he has done, or to spoil

in order to perfect. The man who hesitates to sacrifice the prettiness of his drawing, to its efficiency is lost. As to finish, a working drawing is finished when it tells the workman just what he has to do. To that end, the only end of a working drawing, the designer must know precisely what he means, and say it plainly—with emphasis even, that there may be no doubt about it. Any medium which allows him to do that will suffice.

XX. THE INVENTION OF PATTERN.

Imitation and translation—Memory and imagination—Old-time content with tradition—Modern self-consciousness—Originality—Conditions of to-day—Inspiration—How far nature helps—The use of old work—The designer and his trade—The artist and his personality.

A PATTERN, says the dictionary, is "something to be copied." Perhaps that is why design is so commonly confounded with appropriation, or at the most with adaptation. Translation is a trade of which no one need be ashamed, unless he calls it all his own; but it is not design.

And yet the literal interpretation of the word invention is the true one—something not all ours, which we find, and make our own.

What we think we imagine we more than half remember. Our wildest imagination is only a reflection of something which existed outside of us, in some sort a distorted image of it; and the personal accent, which comes of the mind's mirror not having a flat surface, counts, according to the quality of the individual mind, for or against the version (or perversion) of the fact which we call imagination.

Time was when designers less sophisticated than we are would accept or take for granted familiar lines to work on, and were free to devote all their energies to the *perfection* of pattern—theirs only in so far as, by bettering it, they made it their own. Byzantine mosaic workers were content to play infinite variations upon familiar combinations of triangular cubes; Sicilian silk weavers designed upon the lines of the stripe, and the later Italians upon the principle of the turnover.

Gothic textiles took the continual form of what is called the pine or cone pattern. There was a period when the diagonal stripe prevailed. In later stuffs the plan was for a century or more almost invariably on the lines of the ogee. And so they arrived at mastery. We are for our part too self-conscious, too anxious about the novelty of what we do. The dishing up of stale patterns is not of course design. But neither does originality mean novelty. An artist of initiative will show marked originality in the treatment of the oldest theme. He need not think about originality. If he has it in him his work will be original: he cannot help it. And it is that originality in spite of himself, which alone gives charm to a man's work.

Designers of the present day do not live under conditions the most favourable to their art. It is their misfortune that they are not left to work out the vein of design natural to them, but are continually called off in some other direction. What matter whether there is gold or silver in the neglected working, if it is brass or pewter which happens to be the fashion? We are free neither to follow tradition nor to perfect a style, be it ever so distinctly our own. It is the glitter of newness that attracts.

But in the very variety of the demands made upon us, there is some compensation for their unreasonableness. They excite our ingenuity. The difficulties put in our way provoke solution. To the making of a practical designer there goes an element of pugnacity—he enjoys attacking a tough problem. An artist of feeble capacity may under favourable circumstances arrive at beautiful results. It is in reaching them in spite of adverse circumstances that he proves himself a strong one.

Inspiration comes to a man from without, as well as from within: every competent designer, you may be sure, has made an infinite number of studies, both from nature and old work. But he does not work from them, nor often refer to them, except perhaps to refresh his memory by way of

preliminary to design. The sight of them before his eyes would hamper him.

Spontaneity of design is only then possible when the idea, whencesoever derived, is, so to speak, fluid in a man's mind—so that what his eyes took in as fact flows out at his finger tips in the form of fancy.

Neither is it possible to design straight-away from nature. A designer acquaints himself with natural form, natural colour, natural growth and so forth, and especially with everything suggestive to him of ornament. But in designing he uses not so much these as memories of them. Just so much of nature as comes to him at the moment, and just that in nature which comes unbidden is to the purpose. The rest is overmuch. Ornament can digest no more.

And as with natural motives, so with suggestions from old work. What has become so much a part of a man that he is no longer conscious whence he had it, does not realise that it is not entirely his own, *that* he may make use of. More than that it is dangerous to borrow, if he would keep alive in him the faculty of design.

Towards practical design the first step is to realise how much is involved in working for even the simplest handicraft or manufacture. Amateurs turn with not altogether unwarranted disgust from trade pattern sheets, with the comfortable conviction that they could do better than that at any rate. And so perhaps a person of taste might do, had he the requisite knowledge of technical conditions. Not having it, he cannot.

All trades want learning. In the path of beginners and pretenders difficulties spring up one after another to hinder their advance. The inexperienced have no doubt they could design patterns, if only manufacturers would give them a chance. But it is not so easy as all that. Or rather, it is easy only to those who have been doing it all their lives. A designer, whatever his natural gift, is of no practical use until he

is at home with the conditions of manufacture. It is only when he knows full well the difficulties of the case that he is in a position to avoid or meet them—according to his courage.

Over and above the mechanical construction of design, the designer must needs know all about the materials in which, and the means by which, his designs are to be carried out. He must learn to work to given proportions and with the palette given him, restricting himself moreover to a very limited number of its colours. He has to take into consideration that his design will be judged from two opposite points of view, as seen in the pattern book, and in its place in a scheme of decoration ; and, withal, he has to face the hurrying fashions which foolish or interested persons are continually trying to foist upon him.

And then, when he has learned his trade, and when he has developed, let us hope, to the full the sense of beauty and the faculty of expression that may be his, he has further to be an artist. Unless he has something to say there is no great advantage in his being able to say it perfectly. The best in design is that which there is no discussing. It is there, or it is not. You feel and appreciate it, or you do not. To the expression of that indeterminate something—joy in nature, purpose, thought, human sympathy, feeling, poetry, whatever it may be—there goes, it is true, the training of the workman ; it is in workmanship that the artist finds expression ; without it he is inarticulate ; but, say what we may about design and its mechanism, it is not simply the workman that interests us, nor the artist even, but the man at the back of it all. It is his personality which gives to art its real and lasting value ; not the conscious self he thrusts upon us, but the individual revealed, perhaps without his knowing it, not only in his work and in the high ideal inspiring it, but in the very way he goes about the quest of beauty.

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