

several degrees. Matting forms a useful lower covering for a wall; it is held in place by a wooden molding, both at top and bottom. Dark paint, a geometrical-patterned paper, leather, tapestry, are all suitable for various classes of decoration. In color they should be darker than the rest of the wall, as they occupy the lower portion. The wainscoting is generally seen to be deepest in tone; then follows the dado, which may be rather lighter, the wall filling still lighter, and then the frieze.

The plan gives the appearance of solidity and strength to the room, the several gradations leading up pleasantly to the ceiling above. It is a plan, however, that is by no means invariably followed, and one that may well be departed from under a clever artist's directions; it is not, for instance, always desirable to have a light-colored ceiling. A surbase, or rail of molded wood, divides the dado from the wall above; this is sometimes made wide enough to hold valuable pieces of old china. Or, if a paper dado is used, a border of paper may take the place of the wooden molding. Again, if paint alone is used, a pattern is often stencilled above the painted dado border on the upper wall; this effectually does away with the abruptness that may be too pronounced if the dado is dark and the wall space light in color. When there are many pictures to adorn a room, a painted wall is the background best adapted to set them off to advantage; but, if paper is employed, it should be chosen of some tertiary tint, powdered with geometrically arranged conventional flowers and leaves. If tertiary tints are not approved, a design into which are introduced in minute portions the primary colors, will produce a warm, rich effect, and will yet be free from even a suggestion of vulgarity, provided only that the colors are well balanced.

THE LAW OF CURVES.

"Curves," says an English author, "played a large part in ornament, and often they were drawn in an unscientific manner. A universal law was that all curves, whether springing from other curves or from straight lines, should be struck at a tangent to the lines from which they diverged; and when curves conformed to this rule the effect was agreeable and natural, and when it was departed from the effect was weak and crippled, because the lines would appear to cut through one another, whether continued to that point or not. Further, in two designs of leaves springing from common bases, that in which the stems ended parallel to each other would look better than that in which they approached one another, for in the latter the mental effect would be to continue the lines so as to intercept each other. The effect of these qualities of rhythm, repetition, geometrical symmetry, alternation, equal distribution of spaces and proper relation of curve to curve, made up what might be termed abstract ornament.

"Ornament should not attempt to directly imitate nature; but a large class of genuine ornament was based upon the adaptation of natural forms. There was a beautiful class of ornament not derived from these forms, and which might be distinguished as "abstract" ornament. In the decorative work of all savage nations a great proportion of the ornament was produced by filling up the space treated with simple lines having little meaning or purpose in themselves. This abstract ornament might be traced in a higher form in Egyptian art, and reached its greatest development of perplexity and mystery in Saracenic art, in which a puzzling and complicated effect was produced by the shifting and re-arrangement of a few lines. The familiar Greek key pattern was in like manner a collocation of squares, with one side cut away, interwoven with one another. One of the most intricate Saracenic patterns was a series of concentric hexagons, slightly tilted. Ornament could be produced not only by drawing on a surface, but by varying that surface so as to produce an alternation of light and shade. Ornament derived from nature, while it must not imitate, might have various degrees of approach to nature, governed in their nearness of likeness to a considerable extent by the nature of the material and medium worked in. Thus in crewel work, exact symmetry should be avoided, and the imitation of nature might be comparatively near, but ornament to be placed on a building should be architecturalized. A leading reason against the attempt to precisely copy nature was that in most media it could not be done successfully; the direct effort to reproduce a flower in carving only called attention to the absence of the delicacy, the finish, the fragility of the natural form. Again, such minutely copied work violated the necessity for fitness for its space and purpose. The principle governing growth in nature must be observed in ornament—*e. g.*, as in actual life, all curves must spring in the same direction, whether flowing from right or left

of a central stem, and it was an obvious mistake to repeat the trailing festoons, so appropriate in Renaissance decoration for a wall surface, upon a ceiling. The grotesque did not suggest a misuse or degradation of the subject, and might be more boldly employed. The use of grotesque animals upon jugs or other domestic vessels is almost universal throughout the world. The imitation of artificial objects was invariably bad, because it brought back the mind to every-day matter, and it was generally a proof that it was introduced to save trouble and thought. Artificial objects were very frequently used in Roman and Renaissance work, and also in a great deal of the work by Grinling Gibbons, which was often very faulty in conception, although admirably executed."—*Metal Worker*.

INLAYING.—Every one has noticed that in ordinary inlaying there is a very ugly glue joint, equal in its width to that of the saw used, which runs round the whole of the inlaid pattern. This, of course, looks bad, and further, it involves the use of a very fine saw to reduce the width as much as possible. This, again, involves the use of comparatively thin wood. To avoid this, tilt up the saw-table a little on one side—say to the right; with it in this position cut out the right side of a letter—say a capital I; obviously the uppermost of the two pieces of wood on which we are operating would have its I slightly broader than the bottom one. Then finish the letter, being always careful to make the cut "sun about," as the phrase is—*i. e.*, in the same direction as the hands of a clock move. We now have an I cut out of the top piece slightly broader and longer than that cut out of the lower one; if we have proportioned the amount of "tilt" of the table, with due regard to the thickness of the saw and of the wood used, the upper I will just fit neatly and tightly into the space left in the lower piece. Apply plenty of glue and gently tap the letter or monogram into its place, and we have a glue joint which will be barely visible. The amount of slope required in the table is very slight, and one soon finds out the happy medium.

THE FINEST FLOORS are said to be seen in Russia. For those of the highest grade tropical woods are exclusively employed. Fir and pine are never used, as in consequence of their sticky character they attract and retain dust and dirt, and thereby soon become blackened. Pitch pine, too, is liable to shrink, even after being well seasoned. The mosaic wood floors in Russia are of extraordinary beauty. One, in the Summer Palace is of small squares of ebony inlaid with mother of pearl. A considerable trade is done in Dantzic and Riga by exporting small blocks of oak for parquet floors. There is an active demand for these in France and Germany, but none in England.

CARBON tracing paper is prepared by rubbing into a suitable tissue a mixture of 6 parts of lard, 1 part of beeswax, and sufficient fine lamp-black to give it a good color. The mixture should be warm and should not be applied to excess.

THE JAPANESE FAN AS AN AUDIPHONE.

At a late meeting of the New York County Medical Society, Dr. Samuel Sexton read a paper on the use of the lacquered Japanese fan as an aid to hearing. The fan is constructed on the same principle as the audiphone, being composed of lacquered material that receives any ornamentation that may be desired. Its cost is from 25 cents to \$1, whereas, when first presented to the public, the audiphone was a high-priced article, ranging from \$5 to \$25. By using the model of the human skull Dr. Sexton showed how the sounds of the human voice were transmitted to the auditory nerve, and illustrated how the instrument assisted the defective sense of hearing. He had brought a couple of deaf-mute subjects, by means of whom he gave some illustrations of the advantage of the instrument, which proved very satisfactory to the audience. The best distance for conversation was about three feet. When the distance was less the voice was too loud, and when greater it was indistinctly heard.

M. Planté is about to establish a factory for the manufacture of his secondary batteries. He contends that his form is in reality better than M. Faure's modification, as the latter cannot be charged except by a battery, whereas the simple lead-plates can be worked by a magneto-electric machine.

For the cattle-car prize at Chicago 480 models and 243 plans were presented, 51 models and 81 plans coming from Illinois. There were eight ladies among the competitors. There have been 116 patents issued on cattle cars by our Patent office.