

the requirement of a carpet as far as we are concerned, is that it should harmonize with its surroundings. The consideration of this takes precedence of principles applicable to a carpet viewed by and for itself, on the broad principle observed in all branches of art, that details must be subservient to the "ensemble."

Coming now to the special requirements of a carpet and the general principles of design applicable to it, we find that it differs from all other decorations in the fact that it is always seen obliquely and in perspective, and that it should be pleasing—I do not say look the same—viewed from any part of the room. Everything else has its right way up. The most elementary and obvious way of making a carpet seem correct, viewed in any direction, is of course to build the design on a radiating plan. This, however, seldom proves as satisfactory in practice as in theory. Designs on this principle have an unfortunate way of recalling one's early efforts at school of art, for one thing; then in counteracting a "line" in one direction they generally succeed in creating lines in every direction, some of which cut the lines of walls and furniture at very unpleasant angles. The designs of William Morris and Mr. Voysey for carpets woven in breadths have often been criticized on account of their straight bisymmetrical build, but I must frankly say that when made up and laid they are generally perfectly successful, and, in spite of their not conforming to the teachings of Owen Jones and Dr. Dresser, they are really beautiful and suitable designs. So that I have come to the opinion that the success of a carpet design is but slightly dependent on its build. The adoption of the straight build by no means implies that the design must have an apparent tendency to run in the one direction. If it does, of course the criticism that it is a misapplied wall-paper design may be justified, but it would be easy to select scores of designs bisymmetrical in build, yet free from this objection. I may say regarding the "repeat" of designs, that the drop match is always preferable to the straight match whenever it is practicable.

With this little introduction I will note some of the limitations imposed by the various processes of manufacture. In all cases in which art has to be applied to industrial products, it is essential to practical and artistic success that the artist should be able to think and express himself within the limitations of each particular "metier." I propose therefore just to summarize the chief varieties of carpets, and very briefly to explain their characteristics and the mode of their production.

Commencing with the highest grade, we have first of all what William Morris called "real carpets," by which he meant wholly hand-made carpets. To this class belong the carpets of India, Persia and Asia Minor. Widely different varieties are made in the different districts, ranging from coarse makes with less than 16 points or tufts to the square inch, to as fine a pitch as 700 points to the square inch. In most cases the carpets are made with a "pile" or velvet surface. The loom used is a very primitive arrangement, consisting simply of two horizontal beams or rollers fixed at top and bottom of two upright supports. Around the rollers the warp threads are wound and stretched. The pattern is formed by knotting wool, silk or cotton, as the case may be, around the warp threads. After each row of tufts forming the pattern is tied in, a simple arrangement permits the weaver to draw forward every alternate thread of the warp, while the weft is passed between them. The row is then beaten down firmly with a heavy wooden comb.

Carpets without pile are woven from the back, the wool of each color in the pattern being wrapped round the warp where required, and then passed at the back to the place where it next appears, or cut off if the interval is considerable. Except from the point of view of the wholesale importer, the Eastern

carpet industry is not what it was. Most of the designs now produced in the East are traditional—wearisome repetitions devoid of individuality or vitality. The reverence the public has for the productions (good, bad or indifferent) of Eastern looms is quite touching. The Oriental weaver may be as careless as he or she may please—their mistakes give "character" to the carpets. The beams of their looms may sag with the tension of the warp and so produce carpets that no persuasion will induce to lie flat—and the retailer will assure you that that is one of their special charms. They may use the most hideous colors that dyes can produce, and even then fail to appease the Western hunger for their wares. And all because two and three centuries ago their ancestors made carpets that weave a magic spell round us even yet. But of these I will speak later.

Hand-made carpets, however, are by no means solely produced in the East. This is one of the fictions dear to the ordinary writer on carpets, who cannot think of a European carpet except as the production of the power-loom. As a matter of fact, I believe that as large a quantity of hand-made carpets are produced in Europe as in the East. There is little difference in the way the small tufts of yarn are put into the carpet in the European makes—they are not actually knotted as in Eastern carpets, but in many respects European hand-made carpets will compare favorably with any Eastern carpets now made.

(To be continued).

COATING THREADS OR FABRICS WITH SILK.

The beauty and lustre possessed by silk have long made it the object of imitation in inferior wares. The earliest attempts in this direction were based upon the idea of coating some cheaper yarn or fabric with a film of silk which had previously been rendered liquid by dissolving the waste cocoons or threads in some suitable solution. This method never proved successful, and the attempts in that direction were in time suspended owing to the concentration of attention, first on artificial silk, and later on the process of mercer lustring, says a writer in *The Textile Manufacturer*. Recently, however, the old process has attracted the attention of a Berlin chemist, who has shown his faith in the original theory by developing and perfecting a new method of coating materials with silk. The silk is first dissolved by placing the waste yarns, cocoons, or fabrics in an alkaline solution which is kept at a suitable heat. The yarns or fabrics which require coating are soaked in this solution, and after being hydro-extracted are treated in a concentrated bath of alkaline bicarbonate or are hung in chambers and subjected to the influence of gases containing carbonic acid. These latter may be obtained from the washed products of combustion. The carbonic acid or alkaline bicarbonate combines with the alkali of the silk solution, converting it into an alkaline carbonate, thereby depositing the silk from its solution on to the fiber. After drying the silk on the fiber, the alkaline carbonate is lixiviated by warm water, a portion of which is rendered caustic again by the addition of lime, and serves for dissolving fresh quantities of silk, whilst the other portion is converted by the passage of carbonic-acid gas into alkaline bicarbonate, and again used as a bath for the precipitation or deposit of the silk on to the fiber, or the solution of bicarbonate is heated and carbonic acid expelled from it, which gas may likewise be employed for saturating the alkali and separating the silk. A more definite description of the process is as follows: The silk is dissolved in a caustic lye of 35 to 40 deg. Be. The proportional amount of silk dissolved may vary, as the degree of concentration has no influence in the result of the process. The yarns are put three times through this and freed from superfluous solution by pressing or centrifugal action, dried, and then brought into a large bath of 10 deg. Be. of bicarbonate of soda.