

obtained as nature provides. He further said that "air and water so assimilated have no tendency to separate by condensation until the conditions of temperature or pressure have necessitated it." In order to bring about a natural moisture inside of a mill, Mr. Dobson suggested the utilization in some form of "shallow water troughs making the circuit of the rooms or crossing at different distances according to requirements—the surface exposure of the troughs bearing a relation to the cubical contents of the room and relative humidity required." About these troughs, for example, are placed heated steam pipes in order to warm the water and promote evaporation. The only practical objections to this system of evaporation from troughs are, as Mr. Dobson states it, "the time required to regulate the humidity in accordance with the requirements due to changes in the atmosphere and the expense of the installation." Therefore, if there can be devised a compact mechanical method by which this form of evaporation can be brought about, it will be a great step toward perfecting the system of humidifying factory atmosphere.

We are almost inclined to believe that mechanical methods have been invented for nearly, if not fully, accomplishing the desired end of a natural evaporation by the passage of a thin sheet of warm water over a flat surface exposed to a rapid current of air, that carries with it the particles of evaporated moisture in such a fine state of division, as to possess all of the advantages to be obtained from Nature's process of evaporation, which means the impregnation of the atmosphere with a vapor rather than with globules of water. It therefore would seem that if natural evaporation can be effected and hastened by a mechanical means of blowing air over water, it is a desideratum that is worthy of being aimed at.—Textile American.

OLD-TIME TEXTILE COLORING PROCESSES.

Generally speaking, works on textile subjects are not particularly interesting except to those who are immediately concerned. Now and again, however, one comes across a writer who has the happy knack of interspersing items of a somewhat lighter character, and thus pleasantly varying the more substantial and technical portions of the subject in hand. In a German work entitled, "The Commerce and Industry of the Canton of Glarus," written by Adolph Jenny-Trumpp—which treats of the commercial relations existing between France and Switzerland from 1500 to 1800, laws for the protection of work-people, sick clubs, fully detailed statistics of the textile industries of Switzerland, etc.—a short history is given of the introduction into Europe of various processes for the printing of fabrics introduced from the East. The importation into Europe from India of printed calicos—known as *indiennes*—commenced in the 16th century, though the Indian people previously to this date had long been familiar with the arts of spinning and weaving. The writer describes three of their principal methods of printing fabrics. The first is called the *bandana* process—*bandana* signifying, in the original, to tie up—which consisted in tying up certain parts of the fabric in such a manner that after dyeing the portions so tied remained white. This process was a tedious one; but, by being repeated several times, different colors were thereby obtained. The method was used for cotton, woolen and silk stuffs. The second was the application of liquid mordants or coloring matters upon prepared fabrics. Cotton fabrics more or less bleached, were plunged in buffalo's milk in

which tannin substances (such as myrabolams) had previously been boiled; they were then wrung out and dried in the sun, rinsed lightly, again dried, stretched on a flat surface, and polished with pieces of wood. The required design was obtained by means of stencil papers being placed on the fabric, and a metal solution thickened with a little sand was applied with a brush or a kind of hollow pen. The salts of iron was prepared by dissolving iron scrapings or filings in pyroligneous acid. Clay roots gave, with alumina, a bright solid red; with a bottom of oxide of iron containing tannin, black; with oxide of iron alone, brown; and with madder, lilac. The fatty matters contained in the buffalo's milk heightened the brilliancy of the colors; and, to clean white tissues or brighten the colors, the fabrics were passed through a bath of cow or sheep dung, and sometimes through soap baths. In order to bring out the dark parts, the fabrics were painted in light yellow or pale grey shades, which were produced with different natural coloring matters, with or without alum. Afterwards these stuffs were finished or dressed with starch, shaken after drying, or polished over a table with pieces of wood if a glossy finish was required. The third process was that of the wax resist, the blue being obtained by a passage through a lukewarm indigo vat, and the red by mordanting with tannin and alumina and then dyeing at boiling point in a bath of chay roots. By successive applications of the wax resist it was possible to obtain the following colors; light and dark indigo-blue and red and pink with or without white; then some mixed shades of dark brown were obtained by topping with blue and red; and lilac, with pale blue and pink. This process was quite a labor, requiring remarkable dexterity of hand, and, above all, a large amount of patience. For articles of a very rich color the wax resist method was combined with an application of mordants; for instance, a red and black ground with a wax resist was dyed in indigo to a pale blue; then by means of a brush a yellow natural color was applied, and was fixed with alum or by oxidation in the air; while in the same way green was produced by a mixture of yellow and blue. Many centuries after, these stuffs were imitated in Europe under the name of *Lapis gros bleu*, and *Lapis gros vert*.

SELVAGES.

There is nothing that adds more to the appearance of a piece of cloth than a good selvage. Whether the cloth is to be used by the consumer in a grey or in some finished state, a good selvage is equally a desideratum. In those countries, where grey calicoes are used for clothing, without passing through the hands of tailors or dressmakers, an even, clean selvage is necessarily of vital importance. In goods which undergo some process of finishing before they are purchased by the consumers, the qualities required to form a perfect selvage have to be considered from another standpoint. In these goods the selvages are usually cut away when the material is being made up into a garment. Ladies, however, when purchasing dress goods whether made of silk, wool, or cotton, would hesitate before buying from a piece of material which was bordered by even one ragged selvage, rightly judging that a manufacturer who would be content to produce cloth thus imperfectly made could not be trusted to turn out pieces free from imperfections between the selvages.

Those who are able to keep their looms, from one year's end to the next, upon one make of cloth, soon ascer-