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## SCIENCE AND PRACTICE

# Hand-Printing

Old Tradition - Modern Technique

However perfect machines for printing fabrics may be, they have been unable to dethrone work carried out by hand. What are the main reasons for this? In the first place, although operating costs for roller machines are comparatively low, the fixed costs (engraving of the copper rollers and making ready) are high. This type of production is therefore only profitable when dealing with large quantities of fabrics. Consequently there can be no question of using this process for novelties which must retain a certain seal of exclusiveness. Secondly, screen-printing calls for greater manpower, but the fixed costs (making of stencils) are so much less that it is profitable to use this process both for relatively small outputs of any design and for prints requiring a great number of colours. There have of course been attempts to combine the advantages of both processes and to carry out screen-printing by machine, but in this way the main advantage of work done by hand is lost - perfect workmanship. These then, very briefly stated, are the reasons for the continued survival of hand-printing. In the canton of Glaris, a picturesque and mountainous district of Switzerland, the tradition of hand-printing has remained deep-rooted. Formerly there were more than twenty establishments in this district printing by means of « blocks ». Nowadays this process is used much less frequently (it has been almost completely superseded by screen-printing) but the qualities of skill and delicacy it demanded from the workers, and the attachment of these craftsmen to their work, have been maintained in this particular canton and are still found among the printers of to-day, even though they make use of a comparatively new technique.

Briefly, screen-printing is carried out in the following manner: the piece of fabric to be printed is laid out and secured on a long table (from 45 to 90 yards long) and, repeat by repeat, the different colours composing the design are applied in succession, by means of a stencil, from one end of the table to the other. There is therefore one stencil for each colour; the stencil is made of extremely fine silk gauze, stretched on a frame like a screen (hence the name of this process). A photochemical process



Design workshop.

allows those parts of the stencil which are not to be printed, to be masked by means of a gelatinous film, only leaving free the places which have to remain pervious to colour; when the colour is applied to the whole surface of the stencil by the backward and forward movement of a rubber scraper, it passes easily through the meshes of the gauze to penetrate the fibres of the fabric.

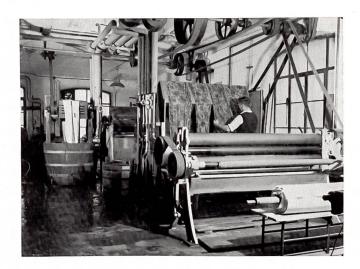


Preparation of the colours.



Screen-printing by hand, using modern processes.

Screen-printing makes it possible to print a theoretically unlimited number of colours, to produce without excessive expense a limited number of the most complicated prints in all the ranges of colours required, to interrupt a printing, to change the combination of colours in a design ad infinitum, or to make a reprint of any given design in the minimum of time and with the minimum of expense. Moreover it is possible, thanks to the nature of the stencils, to make very fine designs which come out very well, the process allowing the fabric to absorb much more colour than can be applied by the



Washing of the printed fabrics.

engraved rollers of machines. The printer can detect and immediately correct any error in register or printing, so that the quality of the prints is always perfect. We will not enter here into the more technical details and will leave on one side the questions of printing by « discharge » or by « resist », and of combinations of colours enabling a greater number of different shades to be obtained without increasing the number of stencils, etc. It is obvious however, that a number of improved accessories for the preparation of the stencils and for the printing itself, makes the work of the printers much easier and enables them to devote all their attention to the quality of the final product.

It is understandable therefore, that the process described above, which matches great technical possibilities with advantages of economy and, at the same time, satisfies all artistic requirements, is being used more and more frequently to-day by the creators of novelties who set the fashion in the manufacture of fabrics. It successfully combines the advantages of a modern technique with the prestige of a centuries' old tradition.

R. Chessex

The photographs illustrating this article have been very kindly put at our disposal by the establishment for printing on fabrics «Seidendruckerei Mitlödi A.-G.» Mitlödi.