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INTRODUCTION

The techniques used in the art of printing have changed and developed with changing times to a great extent. As we review the history of the textile printing it becomes evident that the development of textile printing has been in (a) the decorative aspect, (b) the techniques used, (c) the scientific way.

Creating design on textiles is a way of satisfying the need of decoration which was present even among the primitive people. Printing of textiles started to satisfy the need of decoration. As this art developed and was being used more and more, different methods for practising this art started being developed. This was given a lift by the Industrial Revolution in the 18th century. The decoration of textiles which was initially being done with hand by means of brushes and blocks could now be done with machines, as printing machines were developed during the Industrial Revolution. The primitive people used earth pigments to add colour to their designs. The natural vegetable dyes were used till the first half of the 19th century, after which the synthetic dyestuffs developed and were used.

The designs used since early times were mostly derived from nature. Pictorial designs, depicting scenes from daily life were used. Floral and animal figures were popular. Floral motifs used were flowers, creepers, sprays, sprigs,

plants, etc. In the 16th-17th century the Indian Textile designers reproduced plants, including the tobacco plant, which being a novelty in India presented an ideal decorative motif (19).

Design on the cloth was given importance as it has been the device of special decoration of the textile surface. The decoration relieves monotony and enhances the beauty of the fabric as well as its appreciation. In spite of the different factors that determine the type of design that is prepared and used, any design that is made has its origin in nature. The fresh and fragrant flowers, the fruits, the birds and the beauty of Mother Nature have always tempted mankind to embody these brilliant hues on the apparels they wear.

The designs used for printing in the recent days however vary from those of the earlier days. A study of the designs used in the earlier days and those used today reveal how they have undergone modifications. The pictorial designs are rarely seen. The floral motifs are used but new twists are given to the already existing patterns. These changes are due to the changing demands of the consumers and even due to the changing techniques used for printing.

The techniques used for printing have developed and undergone modifications from the humble block printing adopted by village artisans to the latest technology of heat transfer printing.

Block printing is one of the oldest technique used for printing fabric. The art of using blocks for decorating the cloth is said to have originated in the pre-historic antiquity of India and has been practised in India to perfection (22). The discovery of fragments of cloths in Mohenjo-daro which has been madder dyed shows that dyeing must have been prevalent prior to even 2000 B.C. The printed fragments which have been discovered in an ancient tomb in Egypt dating back from 10th century A.D. The records of the invasion of India by Alexander the Great in 327 B.C. describes the brilliant printed cloths and also the ruins of Fostat or old Cairo in Egypt have yielded a very large number of early Indian fabrics resist printed from blocks and dyed blue with Indigo or red with madder (30).

In the olden days designs on textiles were of five main types described as: (a) printed, (b) tied and dyed, (c) resist printed with wax or starch from blocks and then dyed, (d) direct printed with a dye paste from a block and (e) stencil printed.

Printing on textiles at present is obtained by the various techniques as given below. Some of these can be considered as specific developments.

1. Hand block printing.
2. Spray printing.
3. Screen printing by hand and machine.
4. Rotary screen printing.

5. Engraved roller printing by machine.
6. Heat transfer printing.

The ancient technique of printing with blocks has undergone many changes specially in the materials used for preparing the blocks. In the early beginning stone blocks were used (3). Then wooden blocks came into use which are still being used. Presently blocks using U-foam, felt and linolium are being experimented. By changing the materials for blocks interesting effects can be obtained. Designs printed on paper by any suitable means can be transferred on to the fabric by transfer printing technique. This technique of transfer printing is of a recent origin and has many advantages. Simplicity of execution, fixing of transferred dyes in hot condition without auxiliary, steaming, washing, etc. good printing quality, high machine and labour efficiency are some of the advantages.

Since the transfer printing was of specific application from consumers present trend the investigator was keen to see whether simple block printing and transfer printing techniques can be linked for their small scale use by consumer.

The study first deals with designs and their use for block printing, with blocks having varying materials. Therefore the applications of transfer printing are studied later in the work.

The objective of the study was thus to modify the technique of hand block printing using materials of different

compressibility for the blocks and application of this through transfer printing. The technique of transfer printing is specially efficient for printing materials of synthetic fibers. Disperse dyes which are easily sublimable are most appropriate for preparing printing paste and successful printing by this method.

In this work the technique of transfer printing is experimentally applied for fabrics other than synthetic along with synthetic i.e. cotton, polyester:cotton blends and polyester fabrics, by making the cotton fabrics receptive with the use of synthetic polymer emulsions as a finish and also in the printing paste.