

# 英语进修班教材

印染专业

第三册

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## XII PRINTING (1)

### An Elementary Eintrouduction to Printing

Textile printing differs essentially from dyeing in that it is designed to produce on textile materials multi-coloured patterns rather than a solid, all-over, single colour. The techniques of applying colour in printing may be classified as follows:

1. Direct printing: It is the printing of patterns directly onto material from rollers to form the pattern on the goods.

2. Discharge printing: This method is used for dark-coloured materials which have white or coloured designs

3. Resist printing: This method of printing is used when it is desired to obtain a white figure on a coloured background by dyeing the goods after they have been printed.

The simplest method for printing a pattern is that of using so-called 'blocks'. Block printing was known to the Chinese some 2000 years ago. It consists of carving a thick block of wood so that a pattern stands out in relief. This raised pattern can be smeared with a colour paste and then pressed upon fabric. In this way the coloured pattern is transferred to

the fabric. Block printing can be made to give very fine patterns and the method is used today where exclusive patterns are required, but it has largely given way to roller printing. Scotsman named Bell is credited with having devised the first roller printing machine in 1783. Since then the principles of the machine have changed only a little, but refinements have been introduced so that its mechanical performance is now much improved. It is the roller printing machine which is used all over the world for producing printed fabrics in quantity.

Apart from roller printing there are screen printing and transfer printing, both of which are also the printing methods commonly used today. Screen printing processes are based on the use of simple wood or metal frames across which are stretched silk or metal gauze-like fabrics through which a dye paste can be brushed or rolled on to fabric placed beneath. It is a method which has long been employed to decorate knitted fabrics since those cannot be manipulated satisfactorily in the roller printing machine owing to their ease of distortion by stretching. Transfer printing is really a development of the principle of an early production of coloured patterns on paper.

This has recently been adapted for the colouring of fabrics and more especially those composed entirely or partly of synthetic fibres.

### New Words

1. elementary (eli'ment ri) a. 基础的, 初级的  
     elementary introduction 浅说
2. multi-coloured ('mʌlti-'kʌləd) a. 彩色的
3. pattern ('pʌtən) n. 花纹、花样、图案
4. rather ('rɑ:ðə) adv. 宁可、相反地  
     rather than Conj. 与其说...不如说...  
     不是...而是...
5. single ('siŋgl) a. 单一的  
     discharge (dis'tʃɑ:dʒ) n.v. 拔染
6. discharge printing 拔染印花
7. dark-coloured ('dɑ:k-'kʌləd) a. 深色的
8. design (di'zain) n. 花纹、图案
9. resist (ri'zist) n. 防染  
     resist printing 拔染印花
10. background ('bʌkgraund) n. 背景、底子
11. block (blɒk) n. (凸纹)印花模板
12. carve (kɑ:v) v. 刀刻
13. thick (θɪk) a. 厚的
14. stand out ('stænd aut) v. 突出

15. relief (ri'li:f) n. 浮雕  
in relief 显著, 浮雕
16. raised (reɪzd) a. 凸起的, 高出来的
17. smear (smiə) v. 涂, 抹, 敷
18. paste (peɪst) n. 浆料, 浆糊
19. press (pres) v. 压, 压逼
20. transfer (træns'fɜ:) v. 转移, 传递
21. exclusive (ɪks'klusɪv) a. 专有的, 独占的
22. largely ('lɑ:dʒli) adv. 基本上, 大部分, 主要地
23. Scotsman ('skɒtsmən) n. 苏格兰人
24. credit (with) ('kredit) v. 归功于...享有...盛誉
25. refinement (rɪ'faɪnmənt) n. 精炼, 精心的改进
26. performance (pə'fɔ:məns) n. (机械), 性能, 特性
27. screen (skri:n) n. 网, 幕  
screen printing 筛网印花
28. gauze-like ('gɔ:z-laɪk) a. 纱布样的
29. brush (brʌʃ) v. n. 刷, 刷子
30. beneath (bi'ni:θ) adv. 在...下
31. decorate ('dekəreɪt) v. 缀饰, 染色
32. manipulate (mə'nɪpjuleɪt) v. 操纵, 处理, 摆布
33. ease (i:z) n. 容易, 自由自在
34. distortion (dɪs'tɔ:ʃən) n. 弄歪, 变形

## Notes

### 1. rather than

这两句搭在一起作为一个连接词，在译成中文时，一般具有下列几种意义。

#### (1) 宁愿……不愿……

I would rather die than do it.

我宁愿死不愿做这事。

#### (2) 与其说……不如说……

She is a doctor rather than a nurse.

(=She is more doctor than nurse.)

与其说她是护士不如说她是医生。

#### (3) 不是……而是（一般表示一种选择性的概念）

The temperature for this reaction should be kept mild rather than high.

这里课文中的 ...to produce on textile materials multi-coloured patterns rather than a solid, all-over, single colour. 可译为：“...在纺织物上印制彩色的花纹而不是满地一致的单色”。

### 2. It is the printing of patterns directly onto mat-

erial from rollers to form the pattern on the goods.

此句中的 printing 从语法上讲，应该是一个名词化动名词，因此它后面的 of patterns, directly onto material, from rollers, to form the pattern on the goods 等短语均应属定语性质，但在翻译时该 printing 却具有一般动名词概念：“这

是把花纹直接从滚筒直接印上织物而在织物上构成图案”。

3. ...to obtain a white figure on a coloured background.

这里的介词短语 on a coloured background

从总义上看,作状语或定语似乎都讲得通。

作状语:“在色底上获得白色的图案”。作定语:“获得色底上的白色图案”。

4. ...is credited with having devised...

这里 having devised 是动名词的完成式,构成介词 with 短语。

5. It is...which...

这是一个强调主语的强调句。

6. ...frames across which are stretched silk or metal gauze-like fabrics through which a dye paste..

这里 across which through which 分别连接两个定语从句; 在 across which 的定语从句中主谓结构倒装。

### Exercises

- I. Find words(the first and last letters have been given) in the passage to complete the sentences below, and put them into Chinese:

1. It may perhaps be said that textile printing is ,  
in a sense, also a kind of dyeing, but again d\_\_

\_\_\_\_\_s from dyeing in its demand on and methods of producing c\_\_\_\_\_r on textile materials. Dyeing, as we know, is employed to give s\_\_\_\_\_d a\_\_\_\_\_ - \_\_\_\_\_r shades, while printing is d\_\_\_\_\_d to produce on textile materials m\_\_\_\_\_ - \_\_\_\_\_d p\_\_\_\_\_s r\_\_\_\_\_r than a s\_\_\_\_\_d, a\_\_\_\_\_ - \_\_\_\_\_r, s\_\_\_\_\_e colour. Thus, the methods and machines used for p\_\_\_\_\_g are quite different from those used for d\_\_\_\_\_g.

2. The t\_\_\_\_\_s of how to a\_\_\_\_\_y colour in textile printing may e\_\_\_\_\_y be c\_\_\_\_\_d as f\_\_\_\_\_s:

(1) P\_\_\_\_\_t printing in which the p\_\_\_\_\_s are f\_\_\_\_\_d on the goods by impressing them d\_\_\_\_\_y o\_\_\_\_\_o the material being p\_\_\_\_\_d from colour-printing r\_\_\_\_\_s or by other means.

(2) D\_\_\_\_\_e printing in which a method is used for the printing of a w\_\_\_\_\_e p\_\_\_\_\_n or some pale-c\_\_\_\_\_d d\_\_\_\_\_d onto materials which are d\_\_\_\_\_d all over with a d\_\_\_\_\_k ground shade.

(3) R\_\_\_\_\_t printing in which a different m\_\_\_\_\_d is used to o\_\_\_\_\_n a white f\_\_\_\_\_e on a coloured



b\_\_\_\_\_d just as it is desired to be obtained by the use of the discharge method described above.

3. In the early days printing was done by people in a way of u\_\_\_\_\_g s\_\_\_\_\_d 'blocks', hence the name of block printing, which was known to the C\_\_\_\_\_e s\_\_\_\_\_e 2000 years ago, but has now l\_\_\_\_\_y g\_\_\_\_\_n way to roller printing in spite of its being able to give very f\_\_\_\_\_e patterns and still useful today for the printing of fabrics where e\_\_\_\_\_e patterns are r\_\_\_\_\_d.

4. Since 1783 when the first roller printing machine was d\_\_\_\_\_d by a Scotsman n\_\_\_\_\_d Bell the m\_\_\_\_\_l p\_\_\_\_\_e of the machine has been i\_\_\_\_\_d a lot with the introduction of r\_\_\_\_\_s although there has been found only a slight c\_\_\_\_\_e in the p\_\_\_\_\_s of the machine. It is the r\_\_\_\_\_r printing machine which is now u\_\_\_\_\_d all o\_\_\_\_\_r the world for p\_\_\_\_\_g printed fabrics in q\_\_\_\_\_y.

5. A\_\_\_\_\_t from roller printing the other two types, s\_\_\_\_\_n printing and t\_\_\_\_\_r printing, are a\_\_\_\_\_ also the printing m\_\_\_\_\_s commonly used today.

6. In the p\_\_\_\_\_s of s\_\_\_\_\_n printing b\_\_\_\_\_d on the use of s\_\_\_\_\_e wood or metal f\_\_\_\_\_s a\_\_\_\_\_s

the use of s\_\_\_\_\_e wood or metal f\_\_\_\_\_s a\_\_\_\_\_s  
which are s\_\_\_\_\_d silk or metal g\_\_\_\_\_ - \_\_\_\_\_e  
fabrics the f\_\_\_\_\_s are printed on the a brics  
by b\_\_\_\_\_g or r\_\_\_\_\_g a dye p\_\_\_\_\_e t\_\_\_\_\_h  
the g\_\_\_\_\_ - \_\_\_\_\_e fabrics a\_\_\_\_\_s the frames on to  
the fabrics placed b\_\_\_\_\_h.

7. It is perhaps interesting to find that the p\_\_\_\_\_e  
\_\_\_\_\_e of the present-day t\_\_\_\_\_r printing is sim-  
ply the same as that of an early p\_\_\_\_\_n of  
c\_\_\_\_\_d p\_\_\_\_\_s on p\_\_\_\_\_r.

8. As for s\_\_\_\_\_n printing, it is a m\_\_\_\_\_d which ha  
long been e\_\_\_\_\_d to overcome the difficulties  
in the printing of d\_\_\_\_\_e k\_\_\_\_\_d fabrics which  
owing to their e\_\_\_\_\_e of d\_\_\_\_\_n by stretching, can  
hardly be m\_\_\_\_\_d s\_\_\_\_\_y in the  
roller printing.

9. T\_\_\_\_\_r printing has r\_\_\_\_\_y been a\_\_\_\_\_d  
more and more extensively for the c\_\_\_\_\_g of  
fabrics made with different types of f\_\_\_\_\_s and  
more e\_\_\_\_\_y those composed e\_\_\_\_\_y or p\_\_\_\_\_y  
\_\_\_\_\_y of s\_\_\_\_\_s fibres.

II. Give the Chinese and the Englsih equivalents of

the following, respectively:

1. an elementary introduction to printing
2. 染色浅说.
3. differ essentially from dyeing in the results obtained
4. 主要在所设计的花纹方面不同于原有的。
5. to produce multi-coloured patterns rather than a solid, all-over, single colour
6. 织造多花式的织物而不是单调的。(dull),单一的花纹
7. the printing of patterns directly onto material
8. 棉的互捻结成纱
9. dark-coloured materials which have white or
10. 具有红或黑色背景的浅色织物。coloured designs
11. to obtain a white figure on a coloured background
12. 印制出棕色底上的彩色花纹。
13. to carve a thick block of wood
14. 雕刻一块薄的石板。
15. to smear the raised pattern with a colour paste
16. 把这台新机床涂上油。
17. to transfer the coloured pattern to the fabric
18. 把涂在突起花纹上的色浆转移到在印的织物上。

19. to give way to roller printing
20. 让位于拔染印花和防染印花。
21. to introduce refinements into the first roller printing machine
22. 对第一台连续漂白装置(系统)作精心的改进。
23. to improve its mechanical performance
24. 改善这机口各部件的机械性能。
25. to produce printed fabrics in quantity
26. 大量增加活性染料的生产。
27. to stretch silk or metal gauze-like fabrics across simple wood or metal frames
28. 把塑料的落膜样的布横铺在简易的木框上。
29. to brush a dye paste through the metal gauze-like fabrics on to fabric placed beneath
30. 把漂液通过管子加入在机口较低部位的槽中。
31. a method employed to decorate knitted fabrics
32. 用采染混纺机织物的一种方法。
33. cannot be manipulated satisfactorily in the roller printing machine
34. 可以在绢网印花机中得到满意的操纵。
35. owing to their ease of distortion by stretching

36. 由于他们的容易由加助剂而与纤维素化学结合。
37. an early production of coloured patterns on paper
38. 印花技术的早期应用于纺织工业。
39. be adapted for the colouring of fabrics
40. 使适应于完全或部分由合成纤维组成的织物的染色。

III. Put the following sentences into English:

1. 印花与染色之间的主要差别是印花设计为在纺织物上印制可以含有达12种不同颜色的彩色花纹,而染色只给以素色的,满地的,单一颜色。
2. 拔染和防染印花是一种在印花的上色技术上和对织物的印花的要求上不同于直接印花的另一类印花方法。
3. 虽然手工模板印花已大部分让位于滚筒印花,但由于它能使之印制非常精细的花纹,在需要独特花纹的地方仍在运用。
4. 是1983年由Bell设计的第一台滚筒印花机的原理使用可能(make it possible to...)在以后的改进装置的引入基础上改善它的机械性能并把纺织印花发展到一个新阶段。
5. 除去这种所谓绢网印花之外,还有一种基于早期彩色花纹印制在纸上的原理称之为转移印花的新发展的(newly developed)印花方法。

IV. Translate the following passage with the help of a dictionary: (50分钟)

The history of textile printing is the developing story of the many different methods used from earliest times in applying coloured designs to the surface of cloth. Many of the origins are vague, lost with the civilizations which produced them.

The printing of textiles is not unlike the process of dyeing. Instead of being applied to the whole cloth, as in dyeing, print colour is applied only to specific areas of the cloth to achieve a planned design. Printing has often been referred to as localized dyeing. The same dyestuffs are used in both processes, but dye baths use liquid, and printing techniques start with a paste. The application techniques, of course, differ.

A design may be printed on either white cloth or cloth already dyed. When the colour is applied directly to white cloth it is known as direct or application printing. When the colour is applied to cloth previously dyed, the dye colour must often be destroyed or discharged out before the design colours will show. This method is therefore known as discharge printing. Application printing may also be applied to dyed grounds where the print colour is darker than the dyed ground, or where an opaque pig-

ment or metallic colour like gold is used. In such cases it is known as an overprint.

We also have another style of printing method known as resist printing which calls for printing on cloth white colours that will resist other colors which are applied later.

Resist and discharge styles allow the production of white and coloured patterns on dyed grounds, and are very popular since it is possible to obtain by dyeing, a depth and richness of colour that can not be approached by any process of printing. Also very delicate patterns can be discharged on dark grounds, showing very fine definition that are practically impossible in direct printing.

## XII PRINTING

### Roller (Cylinder) Printing

Roller printing is so called because a roller printing machine is used for the printing process. The main part of the roller printing machine is a central pressure roller or cylinder. Around this, uniformly spaced in relation to each other and to the central roller, are a number of small copper printing rollers which are positively driven. On each printing roller are engraved all these parts of the pattern having the same colour. The colour paste is held in the colour box in which rotates the furnisher roller so that this carries the colour paste on its surface and then transfers it to the printing roller by contact. Colour paste is left only in the engraved pattern of the printing roller, and the excess part on the surface is removed by a sharp steel blade known as a cleaning doctor. Similarly, there is another blade called a lint doctor used to scrape off from the surface of the roller any lint or dirt picked up from the fabric being printed.

In the printing operation all the printing rollers are first brought into registration so that each will



give its colour pattern at the correct position on the fabric being printed. Then the machine is set in motion by driving all the printing rollers each of which in turn drives its own colour furnishing roller. The central pressure cylinder rotates through the pressure of the printing rollers upon it, while both the fabric to be printed and its back-gray move through the machine and are given resilient support by the endless blanket moving in a closed circuit. The fabric becomes printed with a multi-coloured pattern and is drawn away from the machine with the back-gray to be separated and dried. Printing in this manner can be continued to produce many thousands of metres of patterned fabric.

It may be mentioned here that printing machines of this kind can be provided with up to fourteen colour-printing rollers and so they are able to produce patterns in the corresponding number of colours. As described above the machine prints only one side of the fabric. If it is required to print both sides then the central cylinder, with its accompanying printing and furnishing rollers, is duplicated. The fabric is first printed on one side and then passes on to be printed with the same pattern on the