Designing.

NEW DESIGNS.

SCOTCH TWEEDS.

Beautiful combinations of colour are undoubtedly the chief characteristic of these fabrics, and so it may be truly said that *form must be used to show to the best effect the colours and blends employed.*

Blends require applying to form with great discrimination; for example, a strongly toned blend will not require to occupy such a large surface as a more neutral blend in order to give the best effect. This leads up to the principle of colouring Scotch tweeds.

In brief, this principle may be stated as follows:—The general form effect of the fabric, whether stripe or check, must be developed in neutral blends, varying in luminosity. Tone and the distinguishing characteristics of the fabric must be imparted by a few threads of more decided colour, which require using with considerable skill to obtain the best effect.

We do not mean to imply that neutral tints may never be used alone, for if there be a sufficient difference in luminosity and the general tone of the blends employed contrast well, good results will always follow; but we wish to point out that strong colours very often give the principle characteristic to the fabric, and consequently require using with great care.

Designers will find it expedient to proceed as follows:—Represent on paper as nearly as possible the pattern to be produced, whether check or stripe, then fill in the colour according to the general effect of the blend. The colourist will now have his pattern devoid in many cases probably of any distinct characteristic, and theskilled worker will feel at once the stronger colour or colours required, while the unitiated will be able to improve their perception of colour by trying the effect of various combinations. Generally colours of the same characteristics as the blends employed, or the complementary colours to the blends, modified by black or white, will usually be the colours required.

Sometimes it will be found that a whole stripe may be made to partake to some extent of the colour of a single thread, while, at other times, the single thread will form a powerful contrast with the stripe. The following remarks on the colouring of these goods may be found useful.

If the designer is dealing with blends specially prepared for using alone, or with blends of similar characteristics, the beauty of the cloth, to a great extent, must depend on the beauty of these blends, and the form, whether it be striped or checked, should be selected to shew up these blends in the best relative proportions:

In dealing with more pronounced patterns, however, it will generally be necessary to apply the colouring to a given stripe or check, and so the relative quantities of both the body colouring and strong colouring must be decided according to the strength of these colours. Remembering that there are really two ways of modifying colour combination—viz., by contrast of colour and contrast in luminosity, or light and shade—will materially assist the designer here; thus if a combination lacks character, this may be imparted to it either by the introduction of a stronger colour contrast, or by increasing or diminishing the luminosity of colours already in the combination. The above remarks will be rendered more apparent by examples which will be given from time to time in this journal.

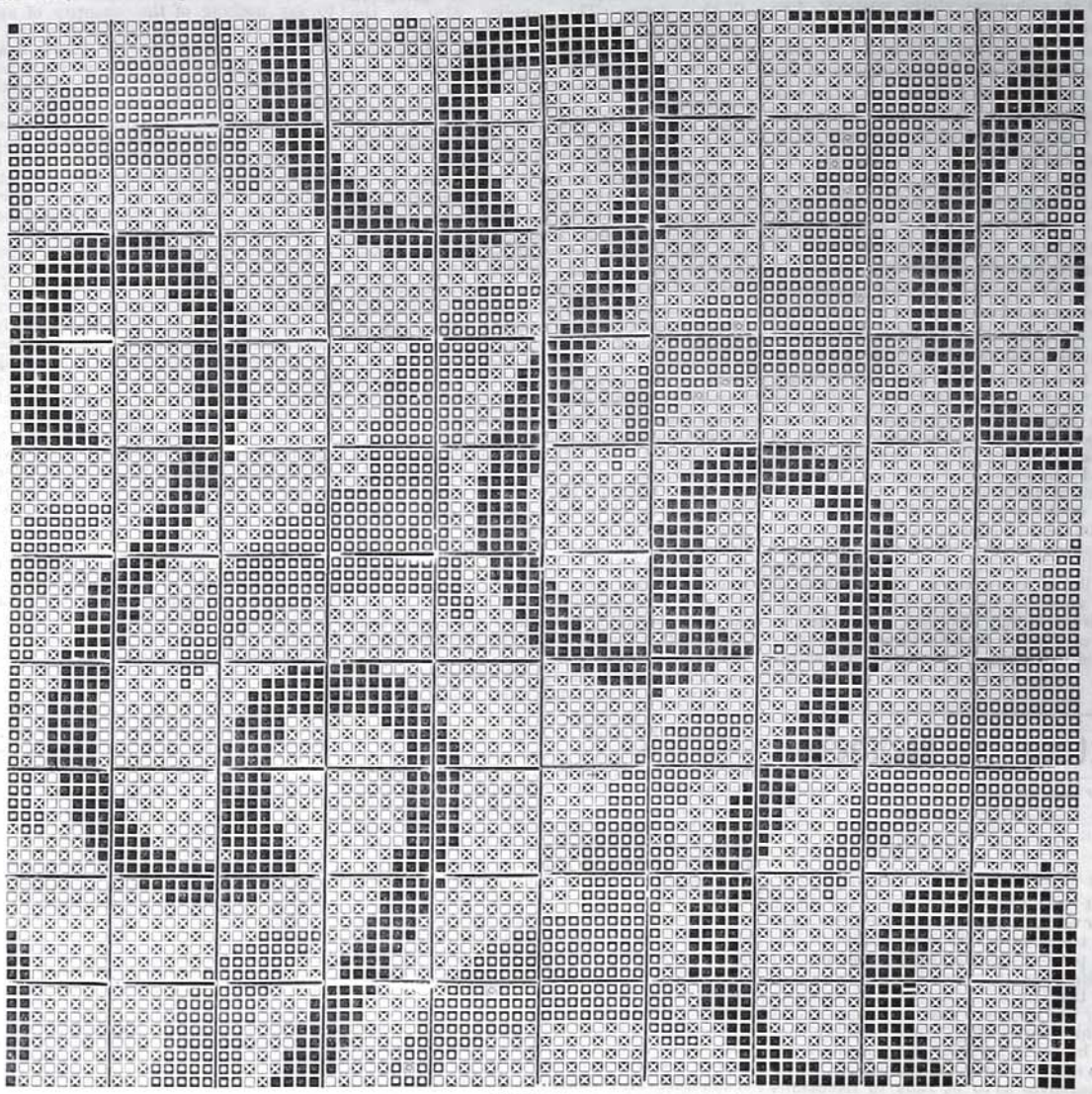


Figure 2.

Design 11, with warp according to the following particulars, is a good illustration of the method of using colour and weave combined, in tweeds:—

Warp.

1 thread	20 sk.	lavender		
1	,,	,, black	}	For 20 threads.
1	,,	,, white		
1	,,	,, black		
2	,,	,, lavender		
2	,,	,, black	}	For 40 threads.
2	,,	,, white		
2	,,	,, black		

10's reed 4's.

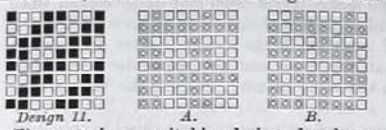
Weft.

1 thread lavender
1 ,, black
1 ,, white
1 ,, black

Or the same as the warp, 40 picks per inch.

The body of the stripe will appear in form like *A*, and the check will appear like *B*.

Coloured threads might be introduced into section *B* to make the check more pronounced. Crimson and gold, or yellow and scarlet, or purple and blue, are suitable colours to use. More examples of this class shall be given later.



Design 11. *A.* *B.*

Figure 2 is a suitable design for lustre goods.

Warp.

All 2/80's cotton.
38's reeds 2's.

Weft.

All 20's alpaca or mohair.
64 picks per inch.

Reference will be made to this next week.

Bleaching, Dyeing, Printing, etc.

RECIPES FOR DYERS.

The following are mostly translations from foreign sources. We do not guarantee the results from these recipes, but give them for the purpose of showing our readers what their foreign competitors are doing.

FAWN ON SLUBBINGS.

For 50 lbs. mordant for 1½ hour at the boil with

1 lb. bichromate of potash,
¼ lb. tartar.

Drain and wash. Prepare a fresh bath with

¾ lb. alizarine orange,
1 lb. extract of fustic.

Enter slubbing at 140 deg. F. ; give three turns, raise temperature slowly to boil and turn to shade.

OLIVE GREEN ON SLUBBINGS.

For 50 lbs. mordant for 1½ hour at the boil in a bath containing

1½ lb. bichromate of potash,
1¼ lb. tartar.

Drain and wash. Prepare a fresh bath with

20 lb. gallamine blue,
5 lb. extract of fustic,
½ lb. sulphuric acid.

Enter slubbing at 150 deg. F., give four turns, raise temperature to boil, and turn to shade, lift wash, and drain.

OLIVE ON CLOTH.

Mordant with

3 per cent. of potassium bichromate,
2 per cent. tartar,

at the boil for 1½ hours ; then drain and rinse. Prepare a new bath with

15 per cent. cœrulien S. W. in paste.
1 per cent. alizarine black, S. W. in paste,

Work for half-an-hour in the cold and two hours at the boil. It is advisable to add one-eighth of a gallon of acetic acid to every 100 gallons of the dyebath. This colour is fast to acids, milling, and light.

GREEN ON CARPET YARN.

Prepare a dye-bath with

1½ per cent. indigo carmine,
1 per cent. picric acid,
½ per cent. light green S.,
6 per cent. sulphuric acid.

Enter the yarn cold, work well, then raise to boil and work for one hour.

BRILLIANT RED ON JUTE.

Prepare a bath with

8 per cent. turmeric,
10 per cent. extract of sumac.

Heat to a hand heat, work the yarn for half-an-hour, take out, rinse, and enter in a cold bath of

2½ per cent. tartar emetic.

Work for 20 minutes, wring and dye in a lukewarm bath with one per cent magenta. Rinse dan dry.

PONCEAU ON WOOLLEN YARN.

Wet out the yarn, prepare a bath with

2 per cent. ponceau R.,
5 per cent. Glauber's salt.

Enter the yarn in the cold, bring to a boil, turn well while boiling for three-quarters of an hour ; take up, add

5 per cent. alum,

Re-enter the yarn, and boil to shade, wash and dry.

COMMERCIAL QUERBRACHO EXTRACT AND ITS DETECTION.

It occurred some time since to the writer that the presence of certain alkaloids in querbracho might prove of advantage in detecting the extract from that wood in dyewood extracts, such as logwood, berry, fustic, &c. On page 99 of "Allen's Commercial Organic Analysis", Vol. III., *Aspidos permum Querbracho* is mentioned as the source of the commercial extract, but I am informed that *Querbracho Colorado* is the one most generally used. Commercial querbracho extract is said to be mixed with other astringent drugs, and palmed off as extracts of querbracho, so that if the presence of the alkaloids were proved in the genuine extract, the amount in these doctored extracts would be very variable. However, I determined to see whether any alkaloids could be obtained from the commercial extract as manufactured by the first-class firms, and two samples were therefore examined in the same manner as used for detection of glucosides and alkaloids in general. Sample No. 1 gave me :—

1·86 per cent. ash (0·81 soluble, 1·03 insoluble) ; alkalinity of soluble equal 0·37 per cent. K_2O.
30·47 per cent. total non-volatile solids.

The total solids on extraction gave :—

3·2 per cent. petroleum ether extract.
50·7 ,, alcoholic extract.

Fifty grams of the extract were examined for alkaloids in the following manner :—

1. Evaporation in a vacuum at 50 deg. C.
2. Residue treated with 250 cc. of 90 per cent. alcohol acidulated for 18 hours.
3. Treating the residue obtained on evaporation of the alcohol with six times the volume of water for 12 hours, and filtering.
4. Treating the filtered liquid from 3 with immiscible solvent, petroleum ether, benzol, chloroform, &c., in the acid state.
5. The liquid after extraction in the acid state is rendered strongly alkaline with ammonia, and extracted as before with petroleum ether, benzol, and chloroform, the latter quite warm.

The residues obtained on evaporation and recovery of solvent were then examined by the general group of re-agents and by the sulphuric acid and lead peroxide test, also by sublimation.

I may say that I failed to detect the least trace of any alkaloid whatever.—J. A. Watson in the *Chemical News*.

Souple Black on Silk.—For this kind of black the raw silk is wetted out in warm water at 122 deg. F., prior to entering the iron mordant bath. According to the degree of weighting intended, from one to five mordant baths of so-called nitrate of iron (ferric sulphate) are applied, and the silk is then washed first in pure water and afterwards in a solution of soda at 132 deg. F. It is next blued in the usual way and again well rinsed. The soupling, that is softening, is effected at the same time as the weighting, by a nearly boiling bath of dividivi, sometimes of galls, upon which the silk is repeatedly turned until it is cold, when about 10 per cent. tin salt is added, and the silk boiled to shade.

Sapan Wood *(Caesalpinia Sappan.)*—This very useful dyewood is to be obtained in considerable quantity over the southern parts of Ceylon, whence it was at one time largely exported. In 1842 nearly 400 tons were shipped to the home market, but since then new fields of supply have been opened, and the trade in Ceylon sapan is absolutely annihilated. It is procured more cheaply, and of equal if not superior quality, from Siam, Manila, and Japan. The local price is £6 per ton, a rate which leaves a loss to the exporter. The colouring matter of sapan is a rather weak red, but by adding lime to the solution or a quantity of cassia leaves, it is considerably strengthened.

FLAX.

Messrs. Cross and Bevan describe, in a paper recently read before the Chemical Society, the results of their examination of the cuticular constituents of the fibre, the only investigation of which hitherto published is that of F. Hodges (*Proc. R. Irish Acad.*, 1881). On exhaustion with boiling alcohol, the fibre loses 3—4 per cent. of its weight ; as the solution cools it deposits a greenish-white resin, which on hydrolysis with alcoholic soda yields a wax alcohol, identified as ceryl alcohol. In addition to the alcohol an oily, ketone-like substance was obtained. The residue appeared to be unresolved ; on submitting to drastic treatment with alkalis, two fatty acids were obtained, one of which from its equivalent, and melting point appears to be cerotic acid. A considerable residue of unresolved products remained.

The green filtrate from the resin-wax yielded on distillation a green, oily residue. From this a further quantity (10 per cent.) of ceryl alcohol was isolated, and a much larger proportion of the oily ketone (15 per cent.) ; the residue being a complex of ill-defined inert compounds, yielding ketones on hydrolysis. These "ketones" have the characteristic odour of raw flax and flax goods, and from their property of emulsifying with water, no doubt exercise an important influence on the wet processes of fine spinning of flax. The pectic group of constituents associated with the cellulose in the fibre proper was found to yield nitric acid on oxidation with nitric acid.

The isolation of a pure cellulose from flax is a difficult operation. The presence of unremoved cuticular constituents accounts for the statements of Godeffroy, that flax cellulose reduces silver nitrate when boiled with a neutral solution of the salt, pure flax cellulose resembling cotton cellulose in resisting the action of this agent. Flax cellulose oxidised with permanganate in alkaline solution yields, in addition to oxycellulose and oxalic acid, acid bodies, from which furfural acid is obtained by acid hydrolysis.

Gallamine Blue is the principal dyestuffs prepared by a modification of the process for making gallocyanine. Gallamic acid is condensed with nitrosodimethlylaniline, when a blue-violet dyestuff is obtained which, under the name of gallamine blue, comes into commerce in the form of a paste containing the bisulphite compound of the colouring matter. The dyestuff dissolves in water with a voilet colour ; in acids with a magenta-red colour, which alkalies turn to red-violet. In dyeing the best results are obtained with a chrome mordant, using from 10 to 20 per cent. of the dyestuff. The dyebaths are not exhausted and may be used over again by bringing up to strength. This blue is well adapted for combining with other dyestuffs.

Messrs S. W. Royse & Co., in their chemical report, dated 30th November, observe :—"It is now well-known that the strong efforts to arrange a fresh combination amongst bleaching powder manufacturers have failed, and that the present arrangements will terminate with this year ; also that there is a similar situation with regard to muriatic and oxalic acids. This will be good news for consumers of these different articles, which are already offered for contract over next year at from 10 per cent. to 20 per cent. below the figures current for present delivery."

Reviews of Books.

All books reviewed in this column may be obtained post free at the published prices from Marsden and Co., "The Textile Mercury" office, 23, Strutt Street, Manchester.

Der Praktische Kleiderfarber (The Practical Garment Dyer), by Carl Schulz.

This little book is issued from the office of the *Farberei Muster Zeitung*, and is the fourth edition. The volume is really a collection of receipts for dyeing silk, half-silk, wool, half-wool, and cotton garments ; there is much useful information in it, and to those dyers who know German it will be found useful. Still, there are many points in connection with garment dyeing on which the reader will find no information in this work, such as the cleaning of garments, stripping of colours, points in connection with the preparation of garments for dyeing, etc. The omission of these is somewhat of a defect in what is otherwise a useful work.