THE THIRD DIMENSION

Fashions in handweaving last much longer than fashions in general. Weaving is either a profession, or a serious hobby, and when we speak about modern tendencies in handweaving, we mean rather general trends, than short lived fashions.

The revival of handicrafts brought us first the colonial weaving. Very logically because that was the last stage of handweaving before it was obliterated by the industrial power weaving. And this period (we might call it Second Colonial) lasted for decades. Then there was not too strong an attempt at introducing Scandinavian techniques. It was never a great success because it would require a high technical knowledge, as well as good weaving equipment not so easy to find on our hemisphere. Finally there came the so called "texture" weaving - a reaction against both Colonial and Scandinavian weaving - a return to the simplicity of the Stone Age. It would not be so bad if it were a honest regression into the childhood of textiles - but unfortunately it took hold not only of the primitive weaving materials, but of the most elaborate modern yarns used by the industry, as well. The resulting confusion is killing the otherwise perhaps legitimate trend. And judging by the results, the end of the "texture" weaving is nothing to be deplored.

Where are we heading now?

It seems that we are trying to salvage the best parts of Colonial, Scandinavian, continental, and even "texture" weaving, adapt these to our modern requirements, and use this material as starting point in our search for new ways in handweaving.

We certainly reject the experiments with unsuitable yarns. We are not so keen on flashy metallics, cellophane, dog's hair, mosses, and corn husks as we were a few years ago. Evidently we are growing up.

But still there is something which we try to retain from the period of experiments with "textures". What was so different in "texture" weaving were not fancy yarns, but the stress on the third dimension - the something which does not show on the draw-down.

When we weave a napkin, we do not want it too rough - for purely practical reasons. On the other hand we do not want it too smooth - not as smooth as oil-cloth for instance. A place-mat may be smooth or not - it may be very rough indeed. A towel, particularly a bath towel must be rough. And so on. Well, the difference between "smoothness" and "roughness" is that in the first case we try to weave a two-dimensional fabric, and in the second case - a three dimensional one.

From purely geometrical point of view every fabric has three dimensions: length, width, and thickness. But if the weaver tries to make the surface of the fabric as uniform as possible, we may speak about a piece of weaving as if it had only two dimensions.

The third dimension comes into prominence when we try to make the texture of the fabric its most outstanding feature. Each fabric has a texture, and any kind of weaving is texture weaving. But it is only when we try to make the texture as uneven as we can, whether the unevenness will be rythmic or irregular, whether it will be obtained

by appropriate weaves, or by the use of yarns of different grist, or of special uneven yarns - that we can speak about 3D fabrics.

We shall not discuss here special yarns such as bouclé, chenille and so. They are a separate subject which we may take up some day. From the point of view of the weaver they are the easiest to work with, provided that the craftsman has good taste, and some artistic background. There are certain technical difficulties particularly when these yarns are used in warp, but otherwise the weaving itself is rather tedious and uneventful. And certainly it does not require much knowledge of weaving, which is perhaps the reason why such yarns are popular among the beginners.

Their serious advantage (apart of the easiness of handling them) is that they produce a texture which is at the same time irregular in detail, but very uniform in the all over effect. Something like a wall finished in rough mortar: there is no regularity in texture, everything seems to be completely haphazard, but still one square foot of mortar looks exactly like any other square foot.. Higher mathematics explain this phenomenon on the probability basis.

Their psychological disadvantage is that half or more of the creative work has been already done by the spinner, or rather by the spinning mill.

The second class of 3-D weaving uses plain yarns but of very different count. For instance let's mix in warp and weft candlewick and 16/2 cotton, with the latter prevailing in a ratio 1:20 or thereabout. We shall mix the two counts more or less irregularly as in the warping plan on fig.1.

We shall use the same sequence for the weft. The general effect will be of "regular irregularity". The fabric can be woven as tabby, or broken twill, or satinet, or in one of the higher weaves such as huck, lace (all lace but no tabby), leno, and so on.

30A, 1B, 20A, 1B, 6A, 1B,
12A, 1B, 24A, 1B, 8A, 1B,
12A, 1B, 12A, 1B, 4A, 1B.

One repeat of warping plan,
A - 16/2, B - candlewick.

Fig.1.

Pattern weaves such as colonial overshot, summer-and-winter, crackle, turned twills, etc - should be avoided. The combination of classical patterns with irregular 3-D effect would be rather unpleasant. But one can experiment cautiously with dissymetrical patterns in very subdued colours in such weaves as modern overshot, or summer-and-winter.

Among the 4-frame weaves turned overshot presents interesting possibilities. Here the heavy yarn may be emphasized by being used in floats instead of being left in the ground weave.

A draft for this weave is shown on fig.2.

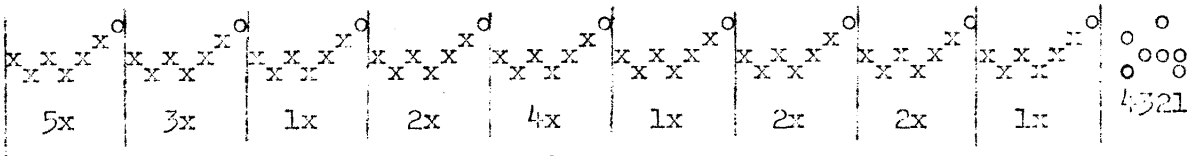

Fig.2

The draft gives only one repeat of threading. Fine yarn is marked "x", and the heavy one - "o". The treadling may be: 4,3,4,3,4,2 - it will

produce floats of 5 in the heavy yarn only. To get similar floats in weft we use from time to time treadle 1 with heavy yarn. The spacing of the heavy weft should be as irregular as of the warp.

Another weave which gives even better results is turned swivel (see MW 16). Instead of coloured yarn we use the heavy yarn both in warp and in weft. We shall discuss this possibility in a separate article

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Finally we have weaves which give us three-dimensional effect regardless of the yarn used. We can enumerate here: corded weaves, crepe, waffle, halkrus, pile weaves. These are 3-D weaves by their nature. But many pattern weaves will give similar effect provided that we do not use them as pattern weaves. Fig.3 gives an example of one repeat of overshot without any pattern. The treadling may be:

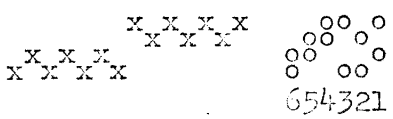

Fig.3

1-st. 1626162614241424,

2-nd. 4646464646146464646462,

3-rd. 6161616142424242.

In each of these treadlings the yarn used on tabby treadles is the same as the yarn for pattern treadles.

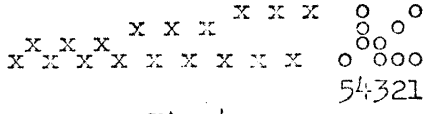

Fig.4

In fig.4 we have an example of All-Over-Spot weave, treated as a texture weave. The treadling:

1-st. 5343534253425141 51, 2-nd. 5343524253435141524251 4154.

Then there are such weaves as huckabacks, M's-and-O's, plain, or turned. As long as we do not try to design a pattern, but use one basic repeat of threading and treadling, the result is only texture, in the proper meaning of this word.

With a higher number of frames the texture grows more and more interesting. For instance a variation of waffle on 8 frames, although woven entirely of the same yarn both for warp and weft, gives an illusion of three different counts being used (fig.5)

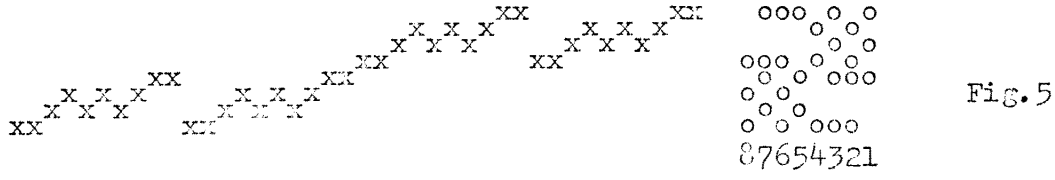

Fig.5

treadling: 1123232344112323234455676767885567676788. The sett of warp shouldbe very close one - about twice the sett required for plain tabby for the same count of yarn. For instance with 8/2 cotton it will be about 40 ends per inch.

But from our point of view all these weaves have one disadvantage: they give three-dimensional weaving, but much too regular, too monotonous. Our "regular irregularity" is just not there.

To get this irregular texture with weaves which have different basic units, we mix these units more or less at random. For instance in case of huckaback we have three possible units: 6x6, 10x10, and 14x14. We may alternate them both in threading and treadling as in Fig.6.

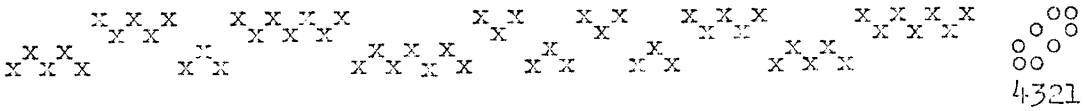

Fig.6

the treadling may follow the threading e.g.: 24242313132423131313 24242423132423124231313242423131313.

To get a more complete impression of irregular texture we can mix different weaves in the same draft (fig.7). We have here Huck, Spot, M's+O's, and Overshot. Since the greatest part of the fabric will be woven in purely accidental manner, a draw-down is a necessity here.

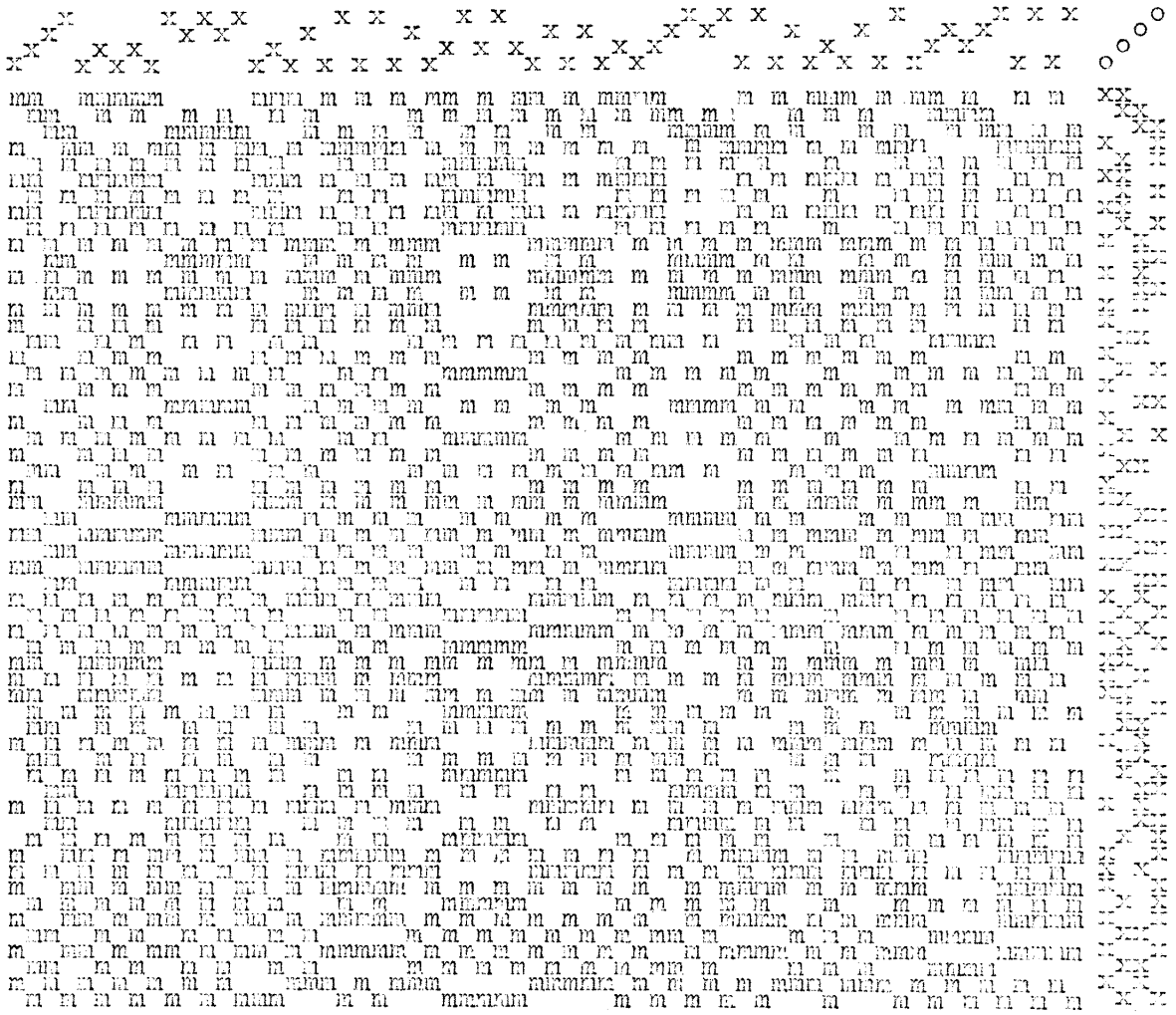

Fig.7

When we examine this draw-down we notice immediately that the all over effect is satisfactory except for the horizontal stripe between A and B. This stripe will run across the whole fabric and will have a distinctly different texture. Thus we shall have to eliminate it by crossing out a part of the treadling (2 or 4 out of 6 picks).

When mixing different weaves in one draft, the treadling may become a real problem. We may need as many as 14 treadles for a 4-frame

loom. Or otherwise just two tabby sheds (1-3, and 2-4) and a direct tie-up. Such a combination of 6 treadles gives all 14 sheds by using two treadles at a time. Still this is not a convenient solution, except for making samples.

A compromise may be reached with a standard tie-up, such as on fig.8. But then either a series of draw-downs or better a number of samples should be made before finding the best treadling. What we have to avoid is: 1-st long floats in warp (there won't be any long floats in weft - the threading draft takes care of them), 2-nd too conspicuous vertical or horizontal stripes. In case of the draft on fig.6, the following treadling gives good results: 646453536262515161212121.

o o oo
o oo o
o o o
654321

Fig.8

The draft on fig.7 is only an illustration how we should proceed when trying to design a new texture weave. It is pure research: first paper work, then experimenting on the loom. The draft is only the beginning. Many 3-D weaves are a failure unless they are woven on a very closely set warp. The reason is obvious - the third dimension must be built with some additional material, and we have to supply this extra yarn when warping and weaving. - Else we shall have only an untidy but otherwise rather flat fabric.

Pile weaves are by definition 3 dimensional, because in addition to the warp and weft (in the ground) they have the pile which is more or less perpendicular to the ground weave. The irregularity of texture means here irregular length of the pile. This can be achieved in many ways. However, the whole subject is so complex that we cannot discuss it here.

Probably the only technique which does not require special equipment is the chenille (twice woven fabric). The irregularity of texture here is no problem.

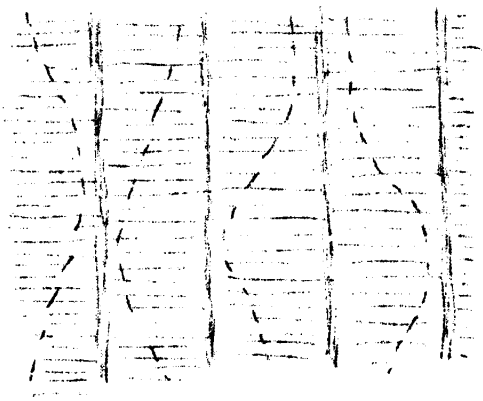

Fig.9

We make the first warp as usual. We can use for the weft (which becomes pile in the second weaving) either one kind of yarn, or two or more of a different count. But when it comes to cutting the stripes of chenille, instead of making the cut in a straight line half way between the two cores (strands of warp), we cut as on fig.9, following wavy and irregular lines. In the second weaving this weft may be used flat, or twisted. The result will be similar in both cases. The length of pile will vary in a completely haphazard way.

We hope that these few examples of 3-D weaving prove that after all there is such a thing as "texture" weaving, but that it is not as simple as many weavers think, and that it requires more than two tabby sheds and an assortment of strange yarns.

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