

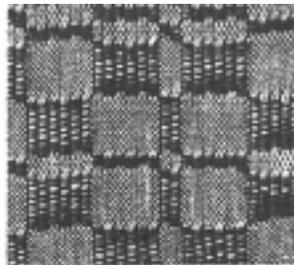
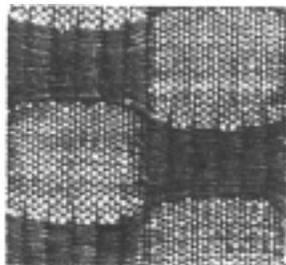
THE CLASSICAL M's AND O's WEAVE

By Harriet Tidball

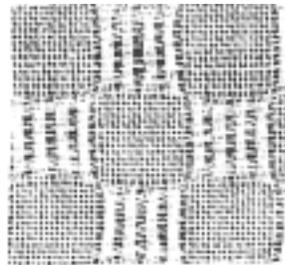
For the first time in many years of weaving, a familiar technique which seldom seems to work out altogether successfully has, to us, become an expressive medium. It is *M's and O's*, a common Swedish and Colonial American linen weave. Since the success of textiles woven in *M's and O's* depends to an extraordinary degree on the selection of material for weaving it, it was the yarn we used—the new Lily 8/2 drapery cotton (Art 108)—which brought the technique to life for us. (See details about this material under the Lily Mills advertisement.)

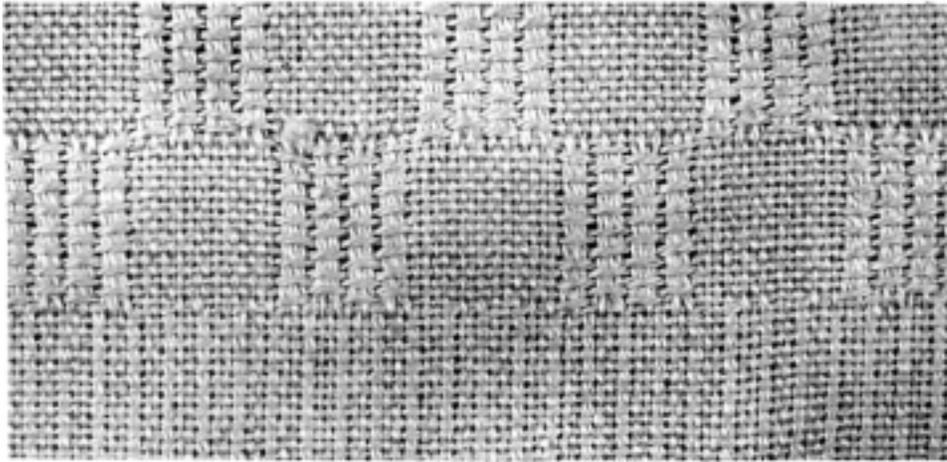
Called "Poor Man's Huck" by Ulla Cyrus, the *M's and O's* fabric is identical on both sides—no right or wrong side. It is described as a balanced two-texture weave in which tabby and weft-rep oppose each other to form patterns. "Balanced" means, as usual, identical warp and weft, single color, beaten to give exactly as many weft shots per inch as warp ends, though in interpretations deviating from the classical, these points may vary. In the opposition of tabby to weft-rep, the experienced weaver will sense an anomaly, as tabby is a true balanced weave, whereas weft-rep is the extreme of unbalance with sufficient weft threads to completely cover the warp. The weakness of the technique lies in this odd texture combination, but, when properly handled, this is the source of the technique's special interest, and beauty. The weft in the rep texture, following the usual drafting system, passes over four, under four warp ends, which allows sufficient laxity for it to pack for a complete warp coverage, but the tabby areas provide resistance which makes this packing difficult. The automatic adjustment to this oddity, in the best interpretations, is distorted tabby areas which take the form of ovals instead of rectangles. Ideally, the fabric texture is like illustration (I), in which a true rep opposes a true tabby. More often, the threads

(I)



(3)





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...nearly squared in the weaving (never as uniform) and is somewhat distorted by squaring the tabby rather than the rep blocks. If long repeats occur in both of the draft block areas, as in illustration (2), it is impossible to control this factor, but it will be seen later that most drafts are designed to avoid this. In the best designs the long vertical blocks will be composed of only two or four rep ribs. These will not form a true rep, as do the long horizontal blocks, but because they are relatively narrow the distortions are not unpleasantly evident. The third designing guide is suggested by illustration (3): the warp and weft thread should be of a soft, clinging type rather than a hard-twisted round type as was used in this sample. Hard-twisted threads slip out of position in the loosely interlaced rep areas and exaggerate the irregularities. Compare illustration (3) with illustration (4) which shows the same type spacing but with the very soft Lily drapery cotton instead of round linen, and notice that in illustration (4) the texture is smooth and even, the so-called rep areas are of firm quality even though the weft does not adequately cover the warp. (4)

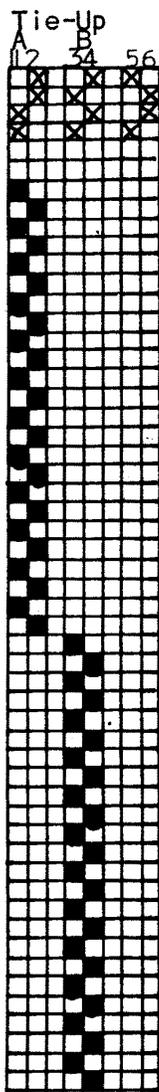


HISTORY OF THE *M's and O's* TECHNIQUE. A search of the handweaving literature suggests that *M's and O's* originated in Sweden but was not extensively developed there. Swedish books containing a general survey of handweaving, present one or two drafts for this technique under the name *Sallvav*. There are also *M's and O's* drafts in the Finnish books, though here they are developed in an unconventional manner which will be taken up later. On the other hand, no drafts in the technique were found in the Shuttle Craft Guild collection of books published in Norway, Netherlands, France or England, or elsewhere, though all of the current general-survey books published in America include the four harness *M's and O's*. Among collections of Early American textiles, towels woven in *M's and O's* are very common, so much so that one would suppose this to be a favorite linen technique of a century ago and earlier. Mrs Atwater in *The Shuttle Craft Book of American Handweaving* (1928, revised in 1951) gives four *M's and O's* drafts, and there are five drafts included in Edward F Worst's collection of Early American linen patterns, *How To Weave Linens* (1926), though no historical background is presented either place. The drafts in more recently published American books quite evidently stem from these, or similar sources.

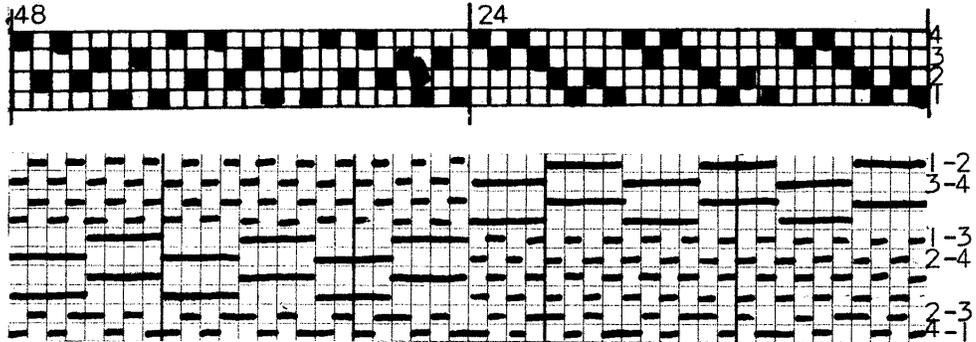
Because of the early popularity of the weave, it may be surprising that in their very practical book, *The Domestic Manufacturer's Assistant* (1817) the J and R Bronson brothers give no *M's and O's* drafts, nor do they mention the technique. There is probably a double explanation for this. The Swedish influence on Colonial American handweaving was not strong as early as 1817, and the Bronson brothers may not have been familiar with the technique. A more practical reason, however, is that the Bronson brothers designed for the countermarche loom on which, whether with four or more harnesses, unbalanced sheds are made as easily as balanced ones. Therefore they concentrated on the off-balance linen weaves, particularly the *Spot Weave*, which in general produces more practical textiles.

Most of the existing Early American towels in *M's and O's* are of the workaday variety, practical linens, produced because towels were necessary in the home. Although there are numerous exceptions, the average towel was woven of handspun linen of a grist which compares to our 20/1, the warp set at about forty ends per inch, with weft identical but less tightly twisted, and woven with forty shots per inch. Undoubtedly woven of unbleached "grey" linen, surviving towels which have seen long years of use are porcelain white from innumerable washings and perhaps sun or dew bleaching. These towels have an excellent texture, light weight, very firm, and with an absorbancy much greater than that of a tabby fabric, because of the four-thread floats. Illustrations (5) and (6) show two enlargements of towels in the Shuttle Craft Guild collection of Early American textiles, and further examples in the collection are identical in pattern and texture.

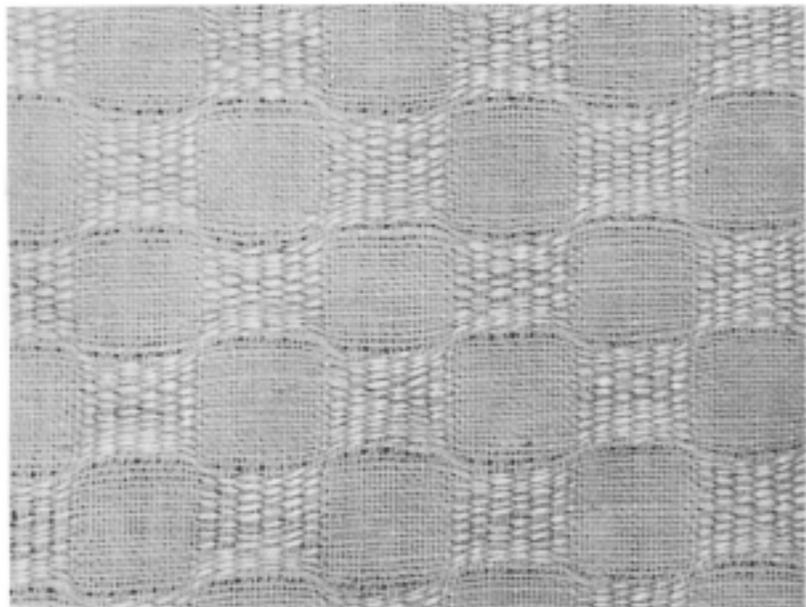
That *M's and O's* was preferred as a linen technique over *Spot Weave* and *Huck* which compose into more practical fabrics, is easily explained, and the



M's and O's Squares

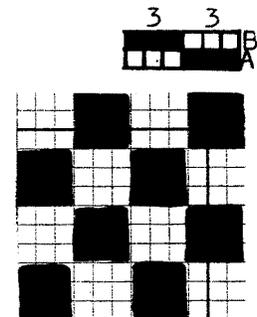


Draft



(5) A Century-Old Linen Towel

Full draft, top right.
 Tie-up, top left.
 Treadling, as-drawn-in, left.
 Structural diagram of weft.
 Photograph, slightly enlarged.
 Profile draft, right.
 Profile development, right.



reason is as applicable today as it was a century ago. *M's and O's* is the only one of the so-called four-harness linen weaves which is woven on balanced sheds (two harnesses up and two down for each shed). Since two-up-two-down is the motion of the simple counter-balanced loom, and this was the loom found in most textile-producing homes, the technique which was natural to the equipment would be the most natural selection.

DRAFTS FOR *M's and O's*. Illustrations (5) and (6) are accompanied by the full technical information: threading draft, tie-up draft, weaving plan, structural diagram, photograph, yarn and warp set, profile draft, and the profile development showing pattern. This covers all the graphic information for a single-color balanced weave of identical warp and weft.

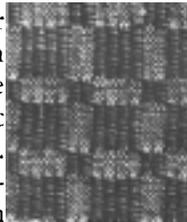
Study of the drafts makes it clear that there are two elements or "units" composing the two textures of this weave, each unit having eight threads. The first or "A" unit is threaded: 1,2,1,2; 3,4,3,4; The second or "B" unit is threaded: 1,3,1,3; 2,4,2,4. These units may stand alone, to form minimum-size blocks, or they may be repeated in entirety as many times as desired for blocks of larger size. Each of the units breaks down into two combinations: 1-2 and 3-4 for Unit A, 1-3 and 2-4 for Unit B. These two pairs are compensating or "opposite" harnesses in both cases, and provide the means for weaving the blocks, or the treadle tie-up. Because they are opposites, it is unnecessary to make any distinction between the rising-shed and the sinking-shed, so only one tie-up draft is given.

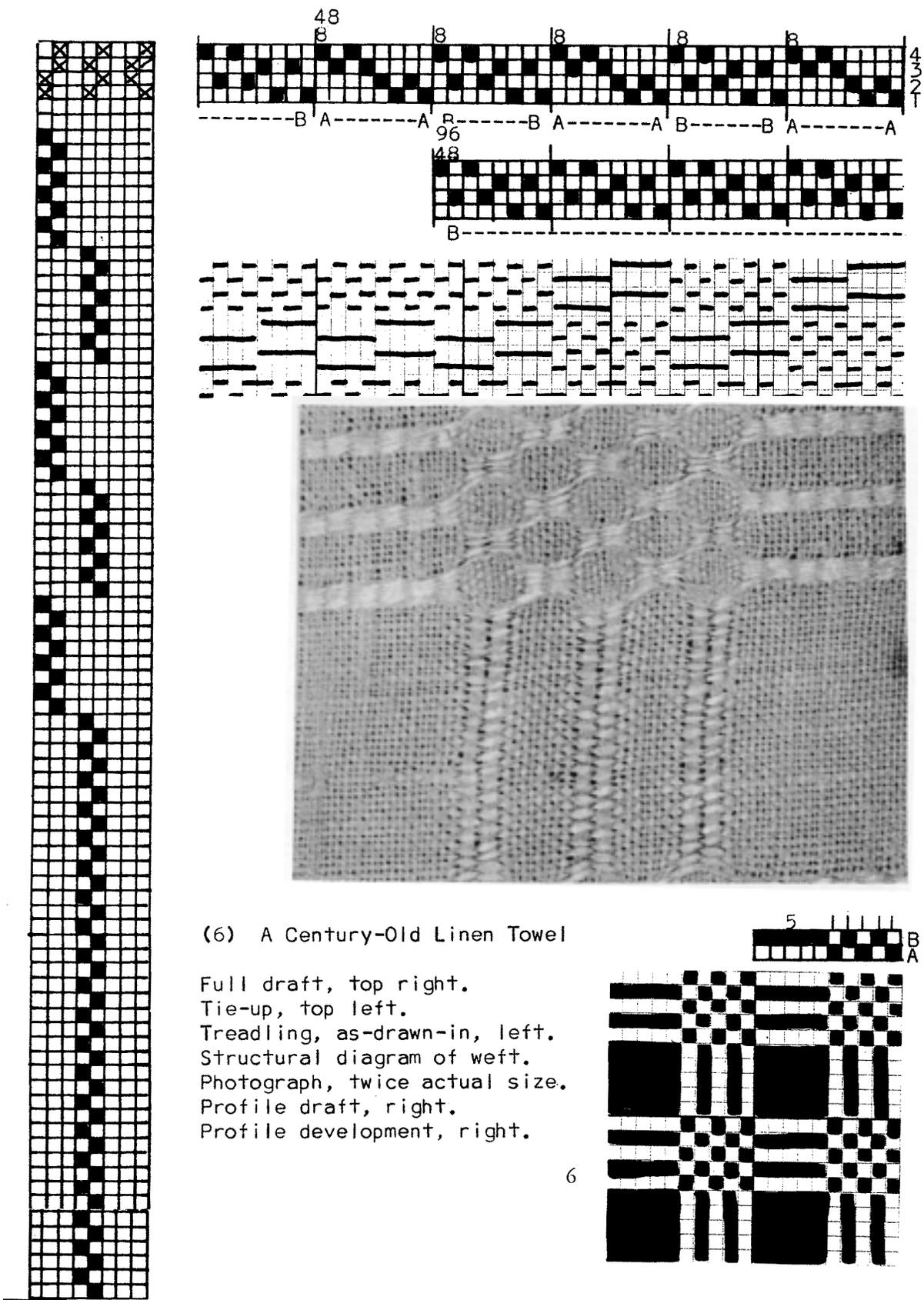
There is no alternating succession in the threading order, such as odds-to-evens or other system which might produce a tabby, so it is evident that there is no tabby with this technique. However, there are two balanced sheds which are not used in weaving *M's and O's* (2-3 and 4-1) which form a kind of pseudo-tabby, part tabby and part two-thread floats, sometimes substituted for tabby. These two sheds are given in the tie-up, though not used in weaving the patterns or *M's and O's* texture. They are diagrammed as the last two shots of the structural diagram, and are shown woven on the sample photographed for illustration (4).

The profile draft is not commonly used for *M's and O's*, but for this conventional four-harness interpretation of the weave it is perfectly feasible, and will therefore be used here to save space. The profile draft is made by substituting for the A unit (1,2,1,2; 3,4,3,4), one square on the lower or A line of the profile draft, and for the B unit (1, 3, 1,3; 2,4,2,4), one square on the second or B line of the profile draft, each time these occur or are repeated.

The literature reveals that there are four main pattern arrangements for *M's and O's*, and further drafts are merely variations of these. The most common pattern is shown in illustrations (1), (3), (4), (5)—a check pattern of the two units repeated one, two or three times, and alternated. The second basic design is shown at illustration (7)—a check with a small and a large repeat. The third general design type is shown on illustration (6)—single units alternated for three, five or seven blocks, followed by one long block. The fourth

(7)





(6) A Century-Old Linen Towel

Full draft, top right.
 Tie-up, top left.
 Treadling, as-drawn-in, left.
 Structural diagram of weft.
 Photograph, twice actual size.
 Profile draft, right.
 Profile development, right.

pattern type is illustrated by (2) in which both units are repeated to form large blocks for patterns similar to the familiar "star," "rose," or "Monk's Belt" type. This last arrangement is seen infrequently because it is not a truly practical pattern due to the fact that the rep texture cannot be restricted to small vertical areas.

Some of the Swedish books show *M's and O's* patterns arranged with borders for luncheon cloths, table mats or napkins. In such cases the border is always composed of the simple alternations of units A and B, repeated for the desired distance.

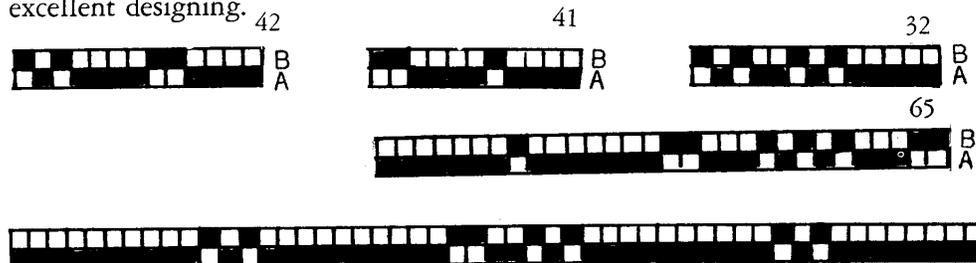
Tabby selvages may be drafted on harnesses 1, 4, alternated. A twill threading will *not* make a suitable selvage, despite the fact that some authors give it, nor an eight thread succession of 1,2,3,4,1,3,2,4. Twill makes the selvage threading for only those techniques which are derived from the twill draft, and *M's and O's* is not one of them.

The drafts which occur in the Scandinavian books, and in other literature for which the drafts have been copied from Swedish sources without conversion to American conventions, appear to have a backward motion because the threading order is usually 4,3,4,3; 2,1,2,1, etc. This is not actually backward, as the Swedish convention places harness 1 at the back of the loom and the top of the draft, while harness 4 is at the front and the bottom. The American convention for harness numbering and drafting, however, places harness 1 at the front of the loom and the bottom of the draft, and this convention is spreading to European writers. Therefore, all drafts which are obviously written for the reverse of the American convention (always revealed by the apparent backward movement of the draft) are converted in SHUTTLE CRAFT to the American form.

Below are three drafts given by Edward Worst (*How to Weave Linens*, 1926). Draft 57 is one which he calls, "The Betsy Ross Towel." The single *M's and O's* draft given in Worst's *Foot-Power Loom Weaving* (1918), figure 211, is identical to draft 58 in *How to Weave Linens*.



Drafts with considerable pattern interest are given in *Kutokaa Kuviolisia Kankaita*, by Ester Preheentupa, Helsinki, 1950. Notice that all of these have long blocks in the A unit only, the B unit being restricted to short blocks—excellent designing.



In *Kutokaa Itse Kankaanne*, Helsinki, 1946, Ester Perheentupa gives a design for napkins with *M's and O's* borders on four sides. The draft is the simple one shown here, for which units of the A, center block, are repeated the number of times required for the desired width. The border may be made wider or narrower by increasing or reducing the number of A and B repeats.



Ulla Cyrus in *Manual of Swedish Hand Weaving*, shows on page 133 of the Swedish edition (1949), page 145 of the English edition (1956), an attractive table cloth of 30/2 cotton set and woven at 50 ends per inch. The draft for this is:



This is one of the few illustrations which shows the large blocks woven in rep texture instead of tabby—practical in this case because of the very fine material and closely set warp.

Gertrude Ingers, in *Handdukar och Duktyg*, I.C.A. Forlagets Vavbibliotek del 1, 1953, gives the three following drafts, each of which is photographed woven as a table cloth with the usual border of alternating blocks.



In *Dansk Husflidsselskabs VAEVBOG* by Jenny La Cour and Johanne Siegumfeldt, Kopenhagen, 1916, is this interesting and rather elaborate pattern.



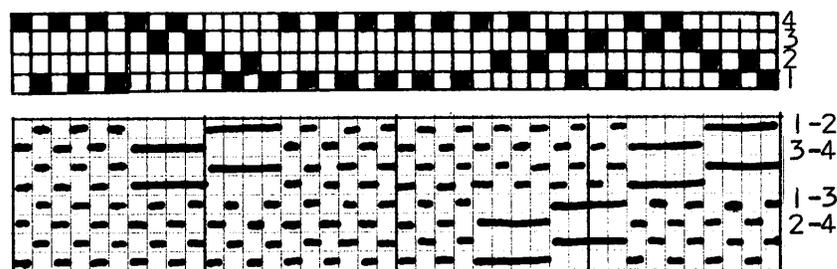
Mary Block's standard Swedish text presents the technique and gives one draft for a luncheon cloth, similar to the Ingers ones.

The comprehensive little German book *Volkstumliche Handwebtechniken* by A v Schimmelman, Stuttgart, 1954, includes *M's and O's* in the technique studies and presents some interesting threading variations which will be taken up later, but adds no new patterns to the classical interpretation.

This survey covers quite thoroughly the literature on the four-harness classical *M's and O's* technique, omitting the general handweaving books published in America in the past fifteen years which do not add significantly to this phase of *M's and O's*. The subject, however, is not complete from these sources. There is the multiple-harness interpretation of the technique which is introduced in the next article, and also several unconventional interpretations in the four-harness draft scope which have special interest and will be taken up next month. Only the conventional approach to the weaving is introduced here, but the tech-

nique provides a basis for many interesting and creative interpretations, a subject which must also be delayed.

One important designing feature of the *M's and O's* technique is, surprisingly enough, completely neglected in the available literature, as though weavers using, teaching and designing in this technique were not even aware of it. This is the true tabby areas which result from adding the repeat threading of harnesses 1,4 to the draft. The only place where even an implication of this is found is in Ulla Cyrus' 1, 4 selvage. The proof of this tabby area is revealed in the unit draft with structural development:



There is a great designing advantage in being able to place plain tabby areas with texture-contrast areas, as this makes it possible to isolate motifs into stripes. The 1,4 threading can be repeated as many times as desired, to give stripes of any desired width.

There is a conceivable objection to this addition of the 1,4 threading to an *M's and O's* warp, but this would apply only if full versatility of control were desired, including the use of the 4-1 and 2-3 pseudo-tabby sheds, in the designing. The addition of the 1,4 combination to the threading obviously makes it impossible to use the 2-3 and 4-1 sheds because the weft would not interweave with the warp in areas so threaded. It is also true that *M's and O's* motifs cannot be woven isolated (completely surrounded by tabby), but are restricted to warp-wise stripes. There is a way to control this, but more than four harnesses are required so this type designing will be taken up under the section for multiple-harness weavers.