

our country is practically sending almost none of the large quantity of spinning and similar machinery constantly in demand.

There are 52 spinning and 16 weaving establishments here, using imported machinery. The weaving establishments with machinery are located as follows: Five at Tokyo, four each at Osaka and Kyoto, and one at Nishinomiya, Sizuoka and Wakayama. There are four flax (jute) mills making canvas and twine, located in Shimotsuke, Sapporo, Otsu and Osaka.

### TEXTILE IMPORTS FROM GREAT BRITAIN.

The following are the sterling values of the textile imports from Great Britain for June and six months ending June, 1898-1899:

	Month of June		Six months ending June	
	1898.	1899.	1898.	1899.
Wool.....	£ 1,841	£ 1,011	£ 22,953	£ 8,325
Cotton piece-goods .....	24,411	34,506	226,795	276,816
Jute piece goods.....	12,924	11,803	67,263	57,408
Linen piece-goods .....	8,761	14,880	66,686	87,935
Silk lace .....	232	834	4,168	8,912
" articles partly of .....	1,314	3,947	10,989	17,202
Woolen fabrics .....	17,850	28,237	106,965	136,566
Worsted fabrics.....	30,348	42,448	276,392	263,242
Carpets .....	6,890	6,559	98,852	102,398
Apparel and slops .....	13,903	12,652	131,372	100,508
Haberdashery .....	3,253	6,543	73,146	78,656

### TROUBLESOME WARPS.

Of the problems requiring solution in the weaving department of the manufacturing industry, probably those dealing with warps which are troublesome to weave present the widest range for the display of tact, observation and application of methods which are the result of tuition and experience. The old proverb, "Prevention is better than cure," is applicable when this state of things exists, and should be rigidly enforced, as far as possible, but although a great number of cases arise through neglecting some particular duty, still a few occur when making some new departure either in the build of cloth or particular class of warp yarns. One of the most common causes of these troublesome warps, says a technical writer in *The Textile Recorder*, is the use of yarns which are insufficiently sized for the strain and friction which they have to undergo. This may be the case with fine, strong yarn intended for some heavily-picked cloth, or may be some soft, spongy yarn intended for shirtings. The finished yarn ought in all cases to be examined before putting it into further use, and the person to pass it should be one acquainted with the use for which it is intended, but even an experienced person, when estimating, in thought, the delay and damage caused by re-sizing the yarn, is liable to be occasionally at fault in his judgment, and will risk the use of rather soft yarn, which is afterwards found not to present the necessary resistance to the friction of weaving. When rove yarn is used for warp, it should be very well sized, because any softness beyond a certain point will allow the threads to be so chafed when weaving that they will draw out in a similar way to a yarn with soft twisted places. These rove warp yarns are used somewhat extensively in matting shirtings, and as the weave of the cloth does not require what is usually termed "cover," the position in the loom and other arrangements can be adjusted in the way which tends to the greatest ease when weaving. The better class of home-trade goods are often made of superior yarn, which will easily withstand all the attempts at covering, and overlookers having rarely to deal with rove warp (possibly under sized), often omit some item in the arrangement for ease in weaving.

The method of shedding and picking early causes unnecessary rubbing of the warp by the weft, because of the firm way in which the weft is held when it is being pressed up to the fell of the cloth, and this alteration alone has made the difference between weaving a warp in a moderate length of time and the more expensive and inconvenient treatment either of using the warp in some other way or having it resized in the warp. The latter arrangement is not always feasible when the warp is composed of several colors, owing to the fact that most colors bleed slightly when sizing, and would therefore destroy the clearness of color which it is so desirable to retain. With warps of this description, which are at best only capable of withstanding the easiest weaves with a low number of picks per inch, very little is gained by altering the make of cloth, but with the finer counts and closer weave of cloth probably some weave might be substituted which would still leave it a marketable article, and though not quite of the original value, the loss would not be as great as with the loss occasioned by the stoppage of the loom, redrawing of the warp threads, dressing of the warp, or other alterations which might be necessary to make the warp weave its original patterns, and the cloth is not always satisfactorily produced when the work has been completed.

A warp which is intended for a fine cambric, and fails to withstand the friction caused by putting in the full number of fine picks, if not suitable to be woven with a rather less number of picks of coarser weft, may be converted into an Oxford make of cloth, with probably only half the number of picks first intended. The method of drawing the threads on four shafts or healds (one, three, two, four) enables this to be done by simply working together the first and third and second and fourth. Some patterns, notably those with single ends or odd numbers of white and color, do not lend themselves to this treatment very favorably, as mixed couples or tapes, white and colored, give an irregular mingled effect which is not often resorted to when designing Oxford patterns. If it was found impractical to proceed with a warp which came under the latter category, it might be found advantageous to redraw the warp or a portion of it and still allow the single ends of color to work singly in conjunction with the double threads, whereby an Oxford cloth would be produced, containing fine lines, effects which seem to be scarcely separable from a range of Oxford designs. The figure is another item requiring consideration when it is composed of a stripe along with some other ground weave. If the cloth is fairly heavy, considering counts, reed and picks, and the figure is even more closely interwoven, trouble may result if stronger yarn is not used for the stripe which requires to endure the extra strain. The calico ground figures which are introduced in Harvard twill shirtings may be instanced as coming under the category; when these calico ground figure stripes are found to be of insufficient strength (either from material or want of size), the quickest way of surmounting the difficulty is to introduce a figure of looser weave. The change in many cases may be made very near the original in effect, but in other instances quite a distinct figure could be more advantageously introduced, and would produce a design of more value than one simply in imitation of the original. When cloth is not made to order, but simply intended to be sold from stock, alterations may be made with a more free hand; but in the execution of definite orders caution should be observed, and as little deviation as possible be made from the original designs.

One class of warps with which it is difficult to deal are those which are tendered in the dyeing or bleaching process, but these would probably be found in the preparatory processes, and if drawn through the healds in tapes or double ends, and woven in Oxford styles, they often carry through the loom with surprising success, as both threads seldom seem injured in the same place, and one helps the other along. Fine places in the yarn often pass the preparatory process and break in the loom: