

water used to dilute the bulk to 5% Be. The liquor is employed at this strength, and is kept at a temperature of 30° C. by indirect steam throughout the operation. After the pieces have been thoroughly and regularly soaked through—which usually necessitates their being entered two or three times into the bath—they are hung up to dry at a temperature of 40 to 45° C., the acetic acid vapors being carried away by the aid of a fan. The next stage is to fix the dressing with water-glass, for which purpose 150 litres (33 gals.) of water and 500 grms. (18 oz.) of water glass are required for each set of six pieces. The goods are entered six times, at boiling temperature, in the jigger, then rinsed and hung up to dry. For each succeeding set of six pieces the bath is regenerated by the addition of 200 grms. (7 oz.) of water-glass, and after five such sets have been treated it is discarded and a fresh bath prepared. Caustic soda is preferably used for boiling out the goods in the first place, since it facilitates the removal of the seed cases of the cotton which are generally found present in the cloth. If these seed cases are allowed to remain behind, they will swell up in the subsequent dressing bath, and becoming compressed and flattened out during the passage through the squeezing rollers of the padding machine, give rise to the formation of ugly red brown stains on the material. The cloth weighing, as stated, 6 kilos. (13.25 lbs.) as it comes from the loom, decreases to 5.6 kilos. (12.32 lbs.) after boiling out, the final weight after dressing being 6.18 kilos. (13.6 lbs.). It will keep for a considerable time, but the dressing should be renewed at intervals, if the sails are in constant use. Moreover, the sails require careful handling, since, if the alumina is removed by rubbing or tears in the cloth, such places are liable to become mouldy if carelessly treated. The author states that he has used the foregoing method for some time, and has never had any complaints of the sails getting mouldy. To renew the dressing on a sail that has been in use for one to two years, the best plan is to soak it in a vat filled with a 3% Be. solution of acetate of alumina. For large sails which require a considerable quantity of the liquid it is best to lay the alumina solution on with a brush, and then dry the stretched sail, fixing with water-glass is then unnecessary.—Farber Zeitung.

SOME CAUSES OF STAINS, STREAKS, ETC., IN FABRICS.

Stains, blotches, mildew, odors, streaks, slats, etc., will probably appear more or less in fabrics of all kinds as long as the goods are manufactured. There are many reasons why these defects cannot be entirely overcome. But they may be kept down to the least possible quantity with care. This is demonstrated by the varied condition of goods from different mills. Mildew stains, as is probably known to most finishers, are the result of heat and moisture causing fungi, resulting in a destruction, or part destruction, of the colors in the goods. If the dyer, washerman, fuller, or finisher permits a piece of wet goods to lie in a hot place for a number of days, fermentation begins after a certain time, and soon mildew is developed. The mildew stage is almost reached time after time in very many mills. This is the case where one department is ahead of the other to such an extent that the goods are piled up in the washing, dyeing, or fulling rooms. The underneath pieces frequently reach that stage of fermentation where, even if the dyes are not affected, the fiber is touched and weakened, resulting in tenderness of the goods. Such goods will not stand the tension strain.

The remedy for the mildew evil is, according to a writer in an English contemporary, to prevent the piling up of wet goods for any length of time. But the trouble may not be detected until too late. There are two stages of the mildewing period: and if taken at the first stage, when the goods are lightly

touched, a good soaping and washing will remove the stuff and leave the goods apparently in as good condition as before. When the last stage is reached, however, a fungus growth is produced, and there is no known process for completely removing it. Of course, some energetic scouring, washing of the goods, and redyeing to cover the staining, will so cover the affected portions that the goods may be sold; but still the goods are not right. There is a final stage of the mildewing which so works upon the cloth that the appearance after washing is as if the places affected were scorched. The coloring is permanent and the places so tender that one can push his finger through the texture. Such pieces should not be sent to market except as remnants to be cut into shirts, using such portions as are not touched.

The cause of slatting, blotching and streaking of many a fine piece of goods may be directly traced to the bunching or twisting and knotting of the pieces in the washing, dyeing, and fulling. Some men put the goods into the machines and expect to run for hours without attention. Strung pieces have been known to keep in touch with the one side of the mill for the whole period of milling. The other side and the centre not coming into contact with the knockers, sides, or friction rollers, would of course receive a different treatment, resulting in streaking the goods from end to end. The difficulty is remedied by occasionally turning the strings, opening them out, and seeing to it that all portions of the fabric are getting equal treatment.

If there are four pieces under way, and the pieces are solid colors or all white, they can be left to run with only an occasional examination. But if the pieces are fancies, they require to be watched from start to finish. Some fancy colored pieces are so delicately colored that the tints are altered or dulled by simply stopping the washing fulling long enough to change the run of the goods. The liquor has a chance to cool and change. In such a case put the goods back without renewing the liquor. Odors arising from mould usually result from the cloth having been stored in a damp place; but odors of oil, grease, dye, etc., are the result of defective manufacturing, and can be remedied only at the mill. To prevent streaks from flocking, the goods should be tacked to keep the flocks from the face. Automatic flocking devices work well as a rule, but for ordinary purposes the fuller will find that a contrivance fixed up in the following manner will answer all purposes: A slot about 4 inches wide must be cut into the front of the mill, and bearings for the rollers arranged. The flocks box is nailed or screwed up and the flocks introduced into this box, from whence they are carried between turning rolls down to an apron. The latter revolves over the rolls. Another leather apron runs over the top rolls, thus carrying the flocks along and depositing them into the mill through the slot. The rolls are the width of the mill. They can be made of wood.

Sometimes sizing stains result from the use of ingredients of improper strength. The flour in the sizing is generally allowed to ferment for some time before it is introduced. It is then mixed and applied. The mixture should be tested before using. Twaddle's instrument No. 2 is adapted for ascertaining the specific gravity of liquids. It consists of a tube, in one end of which two globes have been blown, forming a sort of double bulb. The lower one contains mercury enough to partly sink the apparatus in water, the upper bulb being filled with air cells to keep the apparatus vertical. Mercury is used for weight in the lower bulb. The tube sinks in water to a given point, which is either marked permanently upon the stem or is indicated upon a slip of paper placed inside of the tube before the top thereof is sealed. Usually this slip carries a scale of equal spaces or degrees. To read this scale, multiply the number of degrees by five, and add 1,000, which gives the specific gravity of the liquid