

A by-law to loan \$20,000 to the Empire Carpet Co. to rebuild their mill at St. Catharines, though it received a majority, failed to carry, as it did not receive the necessary number of votes. The vote was 329 for and 181 against. The number required to carry the by-law was 986.

The effect of the price of cotton on the mills of the world is startling. Canada's mills have profited by their foresight in laying in large enough stocks of the raw material to carry them into next season, and none of them have found it necessary to shut down. But it is different elsewhere. More than 2,000,000 spindles are idle in New England cotton mills, and \$3,000,000 has been lost in wages during August. In Fall River alone 755,000 spindles have stopped, throwing 7,300 employees out of work. Out of 91 prominent mills, 44 have curtailed their output, and 55 announce their intention of reducing during August, making the estimated reduction of that month over 25 per cent. In England 700 of the Lancashire cotton mills are working on short time, and 360,000 operatives are affected. In the United States several informal attempts have been made to get the manufacturers together and agree to a general shortening of hours or a shut-down for a stated time.

The outlook for worsteds for next spring's business is said to be poor.

During the past six months Great Britain's imports of raw cotton declined from 8,809,148 hundredweight to 8,660,683 hundredweight.

The value of cotton manufactures imported into the Transvaal during the five months ending with May last is returned at no less than £173,000, as against only £77,000 in the corresponding period of last year. The increase in woollen manufactures was also large, having run up from £55,000 to £141,000.

A daring scheme has come to light to defraud the United States customs by the importation of large quantities of high-class English tailors' woolens into Canada and then, by bribing a customs official at Montreal, sending them through in trunks to New York. A seizure of a large quantity of these goods has been made. It is said that indictments will be asked against a number of British woollen manufacturers and clothing dealers. The London Chamber of Commerce denies knowledge of any cases of smuggling by clothing firms, and woollen exporters also profess ignorance of the matter.

DYE TESTING.

By E. S. Graves, New Bedford, Mass.

The necessity of testing dyestuffs is being recognized more and more by all users of these products, and no large consumer can afford to let such an important matter go. Every dyer knows how essential it is that every shipment of the same color should be the same or "up to the standard." Almost without exception the dyestuffs on the market to-day are adulterated with salt, Glauber salts, dextrine or some other suitable product, and the extent to which this is done is shown by the fact that many of the old standard colors are being put on the market in extra concentrated, double, triple, and sometimes in quadruple strengths. Now that competition is growing keener these concentrated products are found to be more profitable, and in some cases a saving in transportation is effected. Much of the color is now imported

in the concentrated form and adulterated or diluted locally. I once had occasion to ask a prominent importer of dyestuffs why such products were not sold in as concentrated a form as possible, as the saving in transportation was obvious. His explanation was that in the course of manufacture they found that from the same amounts of raw materials on account of unavoidable variations in the several processes they never obtained the same yield of color twice in succession, and, therefore, they adopted as a "standard" a concentration somewhat less than the strength of the weakest yield, and brought all the different yields down to that standard. The necessity of uniformity makes a careful and accurate analysis or test against standard essential for each lot as it is manufactured. When the exact strength is known the calculated quantity of diluent is added and the resulting dyestuff thoroughly mixed in revolving drums. One large German manufacturer, after the color is standardized and thoroughly mixed, stores the dye in huge upright sheet iron cylinders, the color being shovelled in at the top and taken out as needed at the bottom. This method mixes the lots already standardized, and ensures a very uniform product. All manufacturers are not so careful, and especially where concentrated brands are imported and mixed locally wide variations in strength are frequent. In this same factory using the cylinder method of storage a great deal of trouble was caused by a discharged employee, who mixed some foreign colors in one of the cylinders, the difficulty not being discovered until consumers had made complaints and a great deal of harm had been done.

It is, therefore, necessary to test colors not alone to prevent loss from the use of colors below standard, but to guard against slight deviations in shade as well as strength, which cause the dyer endless trouble in producing "off shades." Besides testing colors comparatively for strength and shade, it is often necessary to make comparative trials or tests for fastness to washing, light, acids, cross dyeing, fulling, alkalies, etc.

Testing Dyestuffs for Strength.

The strength of a dyestuff is determined by making a series of dyeings of the sample and the standard under exactly the same conditions. The same amount of material is taken for each dyeing, either five, ten or twenty grams of cotton, wool or whatever material is used, accurately weighed. The same amounts of mordants or assistants must be used; the length of the bath must be the same, either twenty, thirty or forty times the weight of the goods; the temperature of the dyebath must in every case be the same, and it is here that the greatest difficulty lies. The only thing that can vary is the amount of dyestuff used, but in every case the amount of dyestuff used is known. The material to be dyed (if yarn) is reeled off into hanks conveniently thirty-six inches in circumference, and which are best made to weigh exactly ten grams each, in which case a dye pot of 500 c.c. capacity is used. When five gram or twenty gram skeins are more suitable, 250 c.c. and 1,000 c.c. dye pots are used respectively, which will allow a bath as much as forty-five times the weight of the goods when necessary. The dye pots are heated, and the conditions of temperature in the different dye pots maintained the same by immersing them in a hot solution. Different solutions are used for different classes of dyes required to be dyed under or at the boil. For trials not requiring over 70 degrees C. the outer bath is water. For a temperature very near the boil a concentrated solution of either salt or calcium chloride is used, and when the dyeing is carried on at the boil the best outer bath is commercial glycerine, which can be heated to 120 degrees C. and remain quiet, while the dyebath itself is at a steady boil.