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For the Week ending May 25, 1878.

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THE BLACK SILK DECEPTION.

It is a matter of fact too well known to require any demonstration that the quantity of black silk used for wearing apparel far exceeds the amount of colored silk similarly employed. It may perhaps be said that there is no fabric made which finds a more extensive utilization than does black silk, and certainly there is none with which every retailer of drygoods and every experienced fair shopper thinks he or she is more familiar. The seller is always quite willing to affirm that his silk will "wear like a board," although his neighbor's, he insinuates, probably will not, and he is equally ready to advocate the mooted questions of cachemire" or "satin finish," or "soft" or "stiff" silk, just in accordance with the views of the customer being served. The latter has her own predilections in favor of "yellow edge" or "white edge," distinctions for which we never could trace any reason, as different manufacturers do not seem to confine themselves to particular colored edges as indicative of degrees of excellence; and she further knows that silks are apt, 1st, to crack wherever folded; 2d, to pull, so that where once was a smooth fit wrinkles appear, which on nearer inspection are found to be due to the opening of the threads; and, 3d, to become "shiny," or rather to assume a greasy appearance at all prominent portions where the fabric is rubbed.

There also exists among purchasers an undefined knowledge that black silk is weighted in the dyeing, that is, that the dye makes it heavier. Dealers generally admit this in a matter-of-course way, and the buyer is led to believe that the treatment which the silk undergoes is a quite necessary industrial process incident to its manufacture; and that it in no wise reduces wear, makes the silk richer, etc. It is true enough that all dye must render the fabric more weighty; and the average purchaser does not trouble herself, so long as the silk is fine appearing and cheap, to question how much of it is owing to the art of the dyer and how much of it to the silkworm.

More interest, however, might be and perhaps will be taken when it is known that there is now no such thing as a good black silk in the market; and that the black silks now sold in this country, whether domestic or foreign, are such grossly adulterated fabrics as to amount to impositions and swindles of the most reprehensible character. In justice to most retail dealers it should be said that they are the victims of the manufacturers' deceptions, and should, therefore, be classed with the public at large; but there are many firms who have their silks expressly made and expressly weighted according to their orders, and they sell over their counters, as silk, stuff which contains less silk than it does adulterant.

We have frequently stated the fact that by no means all the ingenuity in the world is enlisted on the side of rectitude, but that a very goodly share is devoted to nefarious ends. Progress follows experience regardless of the end in view, and this silk iniquity is an excellent example of the fact. Mr. Lewis Leigh, of Pittsfield, Mass. (a well known silk dyeing expert, to whom we are indebted for the facts in this article), has exhibited to us samples of silk from which he has removed all the dye, and has weighed the resulting pure silk fabric, the result showing, in many cases, that the dye exceeds 150 per cent, and in some reaches 400 per cent, as compared with the quantity of silk. It would astonish some of our fair readers vastly to compare with the original fabric the wretchedly thin webs to which fine, lustrous, thick silk becomes reduced after treatment. They might well wonder not merely how some silks wear, but how they even hang together, for the dye does not add a particle of strength, any more than does the paint on an oilcloth, to which it bears some analogy. The weighting of the silk is not done, as some suppose, by dyeing the finished fabric. In fact, the silk after leaving the loom, beyond simple brushing, undergoes no further treatment. The dyeing processes are carried out on the thrown silk thread, which after boiling receives a large quantity of nitrate of iron in solution. It is then treated with soap and alkali to "kill" the iron, or rather the acid effects of the salt. Another bath of nitrate solution follows, and then another application of soap, and thus these processes are repeated according to the weight desired. The operation is one of building up. When honest silks were made a single process or so of this kind answered all the purpose; but vicious ingenuity discovered that by repeating the operation the thread would be made heavier, and the more numerous the repetitions the greater the weight added.

Bluing by prussiate of potash, which is the next process, is followed by baths of gambier, cutch, or other astringents fastened with tin salts. The fabric after passing through this liquor is cleansed and treated with acetate of iron. Then another gambier bath, and as this stage of the operation also adds weight there is a chance for more repetitions. This, however, is virtually a tanning process through the action of the astringent on the gelatine of the silk, and the result is pretty much the same as that of tan on leather. The fabric is now a heavy, dirty, dull looking stuff. To brighten it it is put in a logwood dye bath, with large quantities of soap, often as much as 8 ounces to the pound. The soap is retained in considerable quantities in the silk, and with the alkali already in the material forms a kind of grease which friction and wear speedily bring to the surface. This is the secret of "shininess" and the wearing smooth of black silks of all grades.

So far the swindling process is the same for all varieties of silks. Now, however, the dyer's art extends to finishing the thread so that the completed fabric shall be soft and satin like, or "scroopy," as the peculiar rustling quality which a stiff silk possesses is technically termed. For the first the thread is sometimes treated with oil and soda; for the second, a little acid goes in. Ladies who think that soft silks and stiff silks possess materially different qualities will thus perceive that there is really no ground for difference at all. After the thread is treated as above described it is wound and woven, and the fabric goes to the market.

It may be asked whether all black silks are thus adulterated. We are positively informed that such is the case. The normal condition of honest black silk is about 17 per cent of dye. Twenty-five years ago the highest percentage reached was 33, but then in the interval dyers have grown wiser.

We have shown the cause of "shininess." Cracking at folds is in the same way due to the extra weight. Just as an oilcloth cracks and breaks when folded at a sharp angle, so does silk, and that the threads pull apart is not at all to be wondered at when the miserable, thin little fabric which bears all the weight of dye is regarded. Colored silks, probably in some measure owing to the smaller demand for them and in great degree to the difficulty of concealing the swindle under various hues, are rarely adulterated. Browns, drabs, slates, and similar shades contain, as a general rule, about 25 per cent weighting, which is not objectionable, but rather gives fullness to the goods. It is generally obtained from a sumac bath. Silks dyed with the anilines being specially bright and highly colored are not weighted, as the addition of the necessary materials to this end tends to obscure the delicacy and brilliancy of the hue.

In order to exhibit the exact weighting of the black silk now sold in New York drygoods stores, we have collected from the six leading houses below named twenty-eight samples of silks of low, medium, and best qualities, as indicated by the price per yard. These, provided with identification marks which gave no clew to their maker's or seller's names, were sent to Mr. Leigh, with instructions to remove the dye, and send us the weights of the pieces before and after the process. In returning them, he states that the general quality of all is good, and that that of Nos. 1, 10, 13, 7, 8, and 17 is especially excellent.

TABLE SHOWING WEIGHTING OF BLACK SILK.

No.	Where obtained.	Price per yard.	Manufacturer.	Relative per cent dye.	Weight of sample before and after removal of dye.
1	A. T. Stewart & Co...	$7.50	Bonnet.	33⅓	26 to 19½
2	" ...	3.25	Ponson.	77.⅓	19½ to 11
3	" ...	2.00	——	83⅓	16½ to 9
4	" ...	1.00	——	109.⅓	11½ to 5½
5	" ...	2.00	Am. special order.	78½	12½ to 7
6	" ...	1.25	"	71½	12 to 7
7	Arnold, Constable & Co	4.00	Tapissier.	46½	22 to 15
8	"	2.50	Guinet.	52⅓	29 to 19
9	"	1.25	"	76.⅔	18½ to 10½
10	J. & C. Johnston	3.50	Maison Hamot.	38.⅓	23½ to 17
11	"	2.50	Teillard.	82.⅓	15½ to 8½
12	"	1.00	Tapissier.	91⅔	11½ to 6
13	Lord & Taylor.....	4.50	Bonnet.	36⅔	20½ to 15
14	"	3.75	Giraud.	81⅔	30 to 16½
15	"	2.75	"	85½	26 to 14
16	"	2.00	Guinet.	71½	12 to 7
17	James McCreery & Co	4.00	Special order.	50	30 to 20
18	"	3.00	"	74.⅔	27 to 15½
19	"	2.25	"	76⅓	23 to 13
20	"	1.40	"	116⅔	19½ to 9
21	"	1.10	"	111½	19 to 9
22	"	1.50	Cheney Bros.	17½	20½ to 17½
23	Boutillier Bros.....	3.00	Teillard.	61.⅓	52½ to 32½
24	"	2.25	Bellon.	63.⅓	27 to 16½
25	"	1.15	"Sans Nom."	107½	14 to 7
26	"	1.15	Givernaud (Am.)	92.⅔	25 to 13
27	"	1.50	"	83⅓	34 to 18½
28	"	1.75	"	83⅓	34 to 18½

No. 22 Mr. Leigh states to be mainly made of waste, and to be of such poor quality that it can easily be sold at a low price without adulteration. Hence the low percentage of dye. Omitting this sample and comparing averages of the others, the following relative percentages of weighting are found:

Silks retailing at and over $3 per yard.....	55 + per cent.
" " under $3 and at and above $2.....	74 "
" " under $2 and at and over $1.....	94 "
Average all grades.....	74 + per cent.

From this it is evident that the lower the price the greater the weighting. Thus, when silk is bought at a dollar a yard, about fifty cents is paid for dye and fifty cents for silk; when purchased at $3 per yard, $2 goes for silk and $1 for dye. Supposing a dress pattern of 20 yards of $1 silk be purchased, then, one half of this being wasted in dye, the wearing value of the silk is represented by $10, or half the amount paid. The same amount of $3 silk costs $60, and its wearing value would be $40. But there is four times as much silk in the $3 fabric as in the $1 goods; hence $40 must be divided by 4, which gives 10 as the wearing value. So that it would seem that the person who buys a $1 silk really gets as much for his money as the buyer of the $3 silk, assuming that the resistance to wear is directly proportional to the quantity of silk present. In fact, however, the discrimination is largely against the buyer of the $1 silk, which is relatively of poorer material, besides being overloaded with a greater percentage of weight. So that in this, as in most all other cases where adulterations are brought to light, the cheaper goods are the most falsified, and, of course, the poorer people who are obliged to purchase these materials are the greatest sufferers.

POWER OF RIVERS.—According to Dr. Young, water moving with a velocity of 900 feet per hour tears up fine clay; at 1,800 feet carries fine sand; 3,600 feet, fine gravel; 2 miles an hour, moves pebbles as large as a hen's egg. Mr. Login believes that when a river has the proper load of sediment it loses in abrading power.