

Scientific American.

ESTABLISHED 1845.

MUNN & CO., Editors and Proprietors.

PUBLISHED WEEKLY AT NO. 37 PARK ROW, NEW YORK.

O. D. MUNN. A. E. BEACH.

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VOL. XXXVIII, No. 21. [NEW SERIES.] Thirty-third Year.

NEW YORK, SATURDAY, MAY 25, 1878.

Contents.

(Illustrated articles are marked with an asterisk.)

Table listing various articles such as 'Amber artificial', 'Astronomical notes', 'Bats, exterminating', 'Blanching preparation', etc., with corresponding page numbers.

TABLE OF CONTENTS OF THE SCIENTIFIC AMERICAN SUPPLEMENT No. 125, For the Week ending May 25, 1878.

Price 10 cents. To be had at this office and of all newsdealers.

Table of contents for the supplement, including sections like 'I. ENGINEERING AND MECHANICS', 'II. TECHNOLOGY', 'III. ELECTRICITY, LIGHT, HEAT, ETC.', 'IV. MEDICINE AND HYGIENE', 'V. AGRICULTURE, HORTICULTURE, ETC.', and 'VI. CHESS RECORD'.

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.

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.

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.

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.

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 cleaned 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.

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.

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.

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.

TABLE SHOWING WEIGHTING OF BLACK SILK.

Table with columns: No., Where obtained, Price per yard, Manufacturer, Relative per cent dye, Weight of sample in gr. before and after removal of dye.

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:

Table showing percentages of weighting for different price ranges: 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).

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.

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.