

Story of Colors Is Fascinating One

Progress in Making Colors Fast Due to British Science

HISTORY GIVEN

Research is Associated With Name of James Morton of Carlisle

The housewife of to-day, confronted with a bewildering choice of materials for her curtains and covers, all of which are relatively proof against fading, has probably forgotten that only thirty years back things in this respect were very different, and it was the usual custom when the sun shone to draw the blinds so as to protect the delicate fabrics within the room.

The progress in this respect is very largely due to British enterprise and to British scientific research and is associated with one name in particular, that of James Morton, of Carlisle. The story of the development of fast colors as applied to woven and printed fabrics is a fascinating one, and forms an epic of industry, worthy perhaps of being ranked with the stories of that great series of inventions in the eighteenth century which, beginning with James Watt's invention of the steam engine, was followed by Richard Arkwright's development of the spinning machine from which we date the establishment of the cotton manufacture.

Peel's Grandfather

Another Lancashire man, Robert Peel, perfected the process of roller printing on calico and founded the cotton printing industry; his grandson became Prime Minister of England. Perhaps to-day the stories of these three inventions are not as well known as they should be, although much of the prosperity of England has been built up on them.

The art and practice of dyeing goes back to antiquity. At first the colors used were of natural origin, mainly vegetable or mineral, though a few, such as cochineal or the Tyrian purple of the Romans, which is obtained from a mollusc, were derived from animals. The discovery of the so-called aniline dyes made from coal-tar is an oft-told story. Originally founded in England by Perkin, the industry spread to Germany, where it fell on fruitful soil and became almost a monopoly of the Germans and the Swiss until the Great War brought about its rival in other countries, including Great Britain.

It is to Morton more than any other man that Great Britain owes the fact that to-day the colors of its fabrics are as sound and as permanent as the fabrics of which they are made.

Began in Windsor

It all began in a shop window. Morton, who was by nature an artist, had taken much pains in the design and coloring of some tapestries. Passing down Regent Street, he viewed these in the window of a well-known shop, and found they had changed so radically that the balance of his schemes had been completely upset, though inquiry showed they had only been in the window for about a week. Much concerned at the revelation, Morton's first step was to ascertain whether other people's fabrics behaved in the same as those of his firm, and he stayed in London long enough to collect a very large assortment of patterns typical of what was then coming into the London market.

On his return north, young tomato plants were hastily removed from the green-house—what the gardener said is not on record—and the patterns, duly mounted on cards with their surfaces half covered and half exposed, were submitted to the effect of daylight in a warm, humid atmosphere. As Morton says, the result was most staggering. Only here and there a color stood out as fast; this gave a hint as to the future.

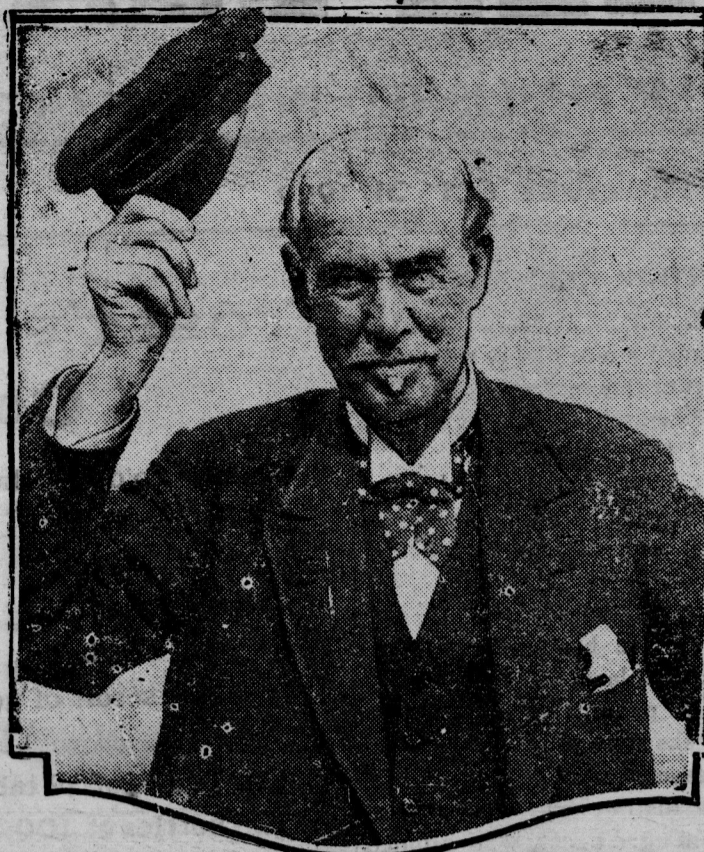
So a reconstructive campaign was instituted, the scheme being to arrive at a range of colors, however small, with which fabrics could be dyed and guaranteed by the maker against fading. Many hundreds of colors were dyed in every conceivable way that would tend to secure fastness, and already by the summer of 1904 a sufficient number of reliable colors had been obtained to make it possible to put tapestries on the market, for the first time in the history of textiles, with a guarantee of fastness.

Education of Trade

The next step was the education of the trade buyer and of the general public in regard to the value of the fast dyes, so that they would be prepared to pay the very considerable extra price. The now well-known trade mark "Sundour" was introduced, and an intensive educative campaign amongst the customers undertaken.

At first only the dyeing of the special colors on yarns was tackled, but later stage the more important

The Grand Old Yachtsman



SPORTSMAN OPTIMISTIC ABOUT YACHT TROPHY

Sir Thomas Lipton, as he arrived in New York recently to make final arrangements for his fifth attempt to win premier yachting trophy for Great Britain.

undertaken and a process worked out for producing at Carlisle the first whole or plain vat dyed goods ever made and guaranteeing them—a much bolder venture, and one which caused astonishment to the Lancashire manufacturers.

At the outbreak of the War in 1914, whilst the firm had its special plant and processes of application, it had grown to be almost entirely dependent on Germany for the supply of its special dyes, as Germany had a monopoly of the manufacture of these fast vat dyes. No one in the firm knew anything of the chemistry of the dyes—they had been fully occupied in their application. To a less determined individual the continuance of the guarantee would have seemed impossible, but Morton was made of sterner stuff. If he could get the blues and yellows it would still be possible to carry on. An appeal was made to the then existing dye-making concerns in England to undertake this task, but in vain; the difficulties appeared too great and they were fully occupied in other directions.

In Wartime

Morton went home to think things over, with the result that he determined to make the dyes—the blue and yellow—himself, even if they cost him their weight in gold. Within three months an ounce or so of each had been produced in the laboratory by methods which can only be followed by the trained chemist. But this was a start, and the next thing was to find the plant in which to make the many thousands of pounds required.

There was a war on, and those who tried to get a plant of any kind during the War without a very high certificate of priority will realize the difficulties which were encountered. One by one these were surmounted, though new troubles always arose; by the end of March, 1915, a batch of twenty pounds was produced, and a real beginning made at the works in Carlisle from plant which was practically all local. To-day of the same colors about ten tons a week are made.

With the two vat-colors under way and a dye-making factory coming into being, attention was devoted to the possibility of making the fastest and most sought after of the acid wool colors which was looked upon as the key color in blues for wool. Indeed, at the end of 1916 it was estimated by a director of the Bradford Dyers' Association that the annual value of the goods dyed with this color was well in excess of £1,000,000.

Years of Trial

Progress at Carlisle was such that the space available became inadequate and development on a more ambitious scale seemed justified. Ultimately a site at Grangemouth was chosen and the firm of Scottish Dyers, Limited, constituted, where the manufacture of the fast dyes was undertaken with new energy.

About this time the dye trade was confronted with certain political issues which had a well-nigh devastating effect on its future. Government had given a promise to restrict the import of dyestuffs from abroad, so as to give the infant industry a start in this country, and had relied on an Act of 1876 for the necessary powers. This intention was upset in August, 1919, by what is called the "Sankey Judgment," with the result that for a time the users were free to import from Germany all they wanted, and it is estimated that something like £7,000,000 worth came into Britain during the

Act of Parliament was passed for the benefit of the dye industry. On the heels of this almost knock-out blow came the severe slump in trade of 1921, and the new venture was faced with two years of adversity.

A New Green

Morton used this period largely for the purpose of chemical research. Convinced that he was on right lines in seeking to manufacture the very latest colors, he was no longer content to match the pre-War German colors, but sought to discover and invent dyes of his own. He had had the vision to acquire the British rights of a novel American process for making a substance called phthalic anhydride as the starting material for their dyestuff syntheses, thus replacing anthracene, a much scarcer and more costly constituent of coal-tar, which is both difficult to purify in itself and is costly to transform into a dye.

Not only were the known dyes made more cheaply, of greater purity and faster, but quite new products came along also. These included the fastest blue ever made, and on September 11, 1920, a green of pure quality, the lack of which had always been one of the obvious gaps of the vat palette.

This green proudly christened Caledon Jade green, created more than a sensation, both because of its purity of shade and because it was found to be the fastest all-round color of the whole vat series. Twenty-two patents for it exist over the world. It is the most outstanding discovery in the dye trade for a quarter of a century since the original introduction of the first vat dyes.

Recompense

Surely the time will come when we shall know
The passing of the dream that men call youth,
When blooms we nurtured in the long ago
Shall yield at length the sombre fruits of truth.

When that day comes our hearts will leap no more
At the bright call of youth, as breakers run
To greet the challenge of the shining shore,
Our days with light and laughter will be done.

But ours shall be the wisdom of old trees
Dreaming of countless summers come and gone,
Glory of westward ships on westward seas,
Beauty of shadow lace upon a lawn,
The sum of love beside a friendly fire,
And peace that is the end of all desire.

—Anderson M. Scruggs, in the Golden Book.

UPON THE MOUNT

No soul can be healthy without the hill-country, its sacred heights whence come new mornings, and release from small limitations, and sense of space and outlook. And the soul must climb its hills even when its circumstances are like a low monotonous plain. It must climb the mount of the revealed purpose of God. It must take a turn up the slopes of some outstanding promise. Get thee up into the high mountains of grace. Look up and get up where good tidings are born, and where thou canst see the land that is very far off! "Go, stand upon the

Historic Finds in Discarded Papers

Lifetime Spent in Rummaging Through Old Documents

TONS OF RUBBISH

Interesting Discovery Made in Papers Found in Garage Recently

In a quiet room, on the top floor of a building in the Strand, sits a man who has spent 40 years in rummaging in the muniment rooms of old mansions, or wherever old deeds and papers may be lying, covered with the dust of centuries.

He is George Sherwood and he has just finished sorting about a ton of documents which he found on a shelf in a garage in Buckinghamshire, lying in the tin boxes in which they had been undisturbed for 250 years.

They evidently belonged to Sir Robert Clayton, a "scrivener," who was Lord Mayor of London in 1680. A scrivener was a sort of banker-solicitor, who had much to do with the property of people all over the country.

One of his clients was Judge Jeffreys, and there are numerous papers dealing with this notorious figure.

There is one of Jeffreys's doctor's bills, rendered by "John Pelling, Pottery," who is mentioned by Pepys. The learned lord was supplied with "hartshorne, a febrifuge, a bitter wine, a plaster for the stomach, a cardiall bolus, and chalybeate julep."

There is also the original marriage settlement of George, Lord Jeffreys, Baron of Wem, and Ann his wife.

Oliver Cromwell

Oliver Cromwell turns up on several occasions. There is a lease dated January 11, 1652, granted by "The Right Honble. Oliver Cromwell, Capitaine generall of all the forces raised by authority of Parliament." The signature, "O. Cromwell," is rather shaky but quite legible. Two other deeds are signed "O. Cromwell" and "Oliver P."

A letter from the Privy Council announces the birth of a Prince to James II. (afterwards the Old Pretender), dated June 10, 1688. The signatures are Jeffreys, Sunderland, Powis, Castlemaine, Bathe, Craven, Middleton, Dover, Dartmouth, J. Ernie, John Nicholas.

Another interesting paper is a copy of the warrant addressed to the Sheriff as to the form of execution of "W. R. in respect that he is the eldest son of a Peer of this Realm." The scaffold is to be in Great Lincoln's Inn Fields, and the body is to be delivered over to Lady R. to be privately buried.

Those issuing the warrant seemed to be rather shamefaced, as they mention their victim only by initials. He was, of course, Lord William Russell.

Another Week

One day the office boy went to the editor of the Soaring Eagle and said: "There's a tramp at the door and he says he has had nothing to eat for six days."

"Fetch his in," said the editor. "If we can find out how he does it, we can run this paper for another week."

That's All

Mistress (engaging maid) — "And have you any religious views?"
Maid—"No, ma'am, only a couple of postcards of Southend."



910—Slip on dress, fronts of dress in three sections; upper sections tucked at shoulders, lower section cut circular and joined in pointed outline; applied bands around neck and down front; dart-fitted sleeves perforated for short sleeves. For Ladies and Misses.

Years 16, 18, 20. Bust 34, 36, 38, 40, 42, 44, 46 inches.

HOW TO ORDER PATTERNS

Write your name and address plainly, giving number and size of such patterns as you want. Enclose 20c in stamps or coin (coin preferred; wrap it carefully) for each number, and address your order to Wilson Pattern Service, 73 West Adelaide St., Toronto. Patterns sent by an early mail.

The Higher Culture

Kansas City Star: It is said that the per capita book sales in this country are somewhat less than one book each year. This must be very depressing to those in the book business, but they'll just have to be patient. We're busy just now making every man in America a two-car family. When that is accomplished, then we'll see about the two-book families.



1st Caveman: You say they put him out of a club?
2nd Ditto: No—put him out with a club.

The Explanation

Waiter—"Zoup, sir? Zoup? Zoup?"
Guest—"I don't know what you're talking about."
Waiter—"You know what hash is? Well, zoup is looser."

From Youth To Old Age

THERE are three trying periods in a woman's life: when the girl matures to womanhood; when a woman gives birth to her first child; when a woman reaches middle age. At these critical times Lydia E. Pinkham's Vegetable Compound helps to restore normal health and vigor. Countless thousands testify to its worth.



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