

HOW THREAD IS MADE.

What Cotton Goes Through Before It Reaches the Needle.

Few people ever stop to think of the twistings and turnings and the various processes that cotton fiber goes through after it is taken from the pod before it is wound up on a spool and ready for the housewife's needle. The whole story is told, however, in a small space in one of the cases in the hall in the National Museum given up to an exhibition of textile fabrics. This is one of the many object lessons in the museum, which, combined, are intended to tell the story of a man as he exists on the earth. First is shown a specimen of cotton in the pod just as it is picked, without having the seeds removed. Next is shown a specimen of the same cotton after it has been ginned and the black seeds have been removed.

The Sea Island cotton is used for thread on account of the length of the fiber. A sample of the sacking in which the cotton is baled is also shown. Then the cotton is supposed to have been baled and shipped to the thread factory. Here the first thing that is done with the cotton is to subject it to the "picker" process, by which the cotton from several bales is mixed to secure uniformity. During the picker process much waste in the form of dust, dirt and short fibers are separated from the good fibers by the picker. Next the "picked" cotton is wound on a machine in sheets or laps into a roll. The next process illustrated by a practical exhibit is the carding by which the sheets of cotton are combed or run out into long parallel fibers. The cotton is next seen drawn through a trumpet-shaped opening, which condenses it into a single strand or "sliver." Then eight such slivers are run together into one, six of the strands thus produced are drawn into one, and again six of the strands from the last drawing are combined into one. Then comes the spinning or fast "roving" process, which consists of winding the strand and bobbin. Two strands are twisted and again wound on a bobbin. After a number of other twistings and windings, during which the strand is gradually reduced in size, until it begins to assume a thread-like appearance, two strands of this fine "roving" are run together and twisted, under considerable tension, on a bobbin that makes seven thousand revolutions a minute. Two of the cords thus produced is transferred thence to another spool, and then three threads of two cords each are twisted together, forming six-cord thread.

One who has followed the process sees the cotton gradually transformed from a wide band or sheet of loose cotton to a compact thread that will pass through the eye of a needle. The six-cord thread is at last taken from a bobbin and reeled into a skein, in which form it is bleached or dyed. Then it is wound back into the skein upon a big spool, from which it is supplied to little white birch spools from which it is wound in regular courses, and is then ready for the market. The machine that regulates the last winding measures the number of yards wound on each spool. The spools are made of various sizes to hold from two hundred to twelve thousand yards of thread. The labels that decorate the ends of the spools when they are sold are last put on. They are cut and pasted on by machinery with great rapidity.—*Washington Star.*

BRAZILIAN DOCTORS.

Their Charges Regulated by the Estimated Value of a Patient's Life.

The Brazilians are an indolent people, and lazily protest against improvements which are certain to disturb their listless ways. Their Emperor, Dom Pedro, stands alone among living rulers for the extent of his scientific attainments, and he devotes himself with exceptional energy to every branch of public affairs. He has inspired some of the leading officials to imitate his public spirit and energy. But with the mass of his subjects he is not popular. His industry shames their indolence; their shame irritates instead of stimulating them, and they murmur against the energetic ruler who will not let things remain as they are.

Brazilian doctors are as eccentric in their charges as the people are in their desire to enjoy the pleasure of being let alone. The physicians do not regulate their charges by the time and labor they have expended in the patient's service, but by the estimated value of his life. As this value is determined by the patient's income, he, if he survives, is treated by the doctor as wreckers treat a stranded ship—the greater the value, the larger the salvage. A young English engineer, while engaged in some work in the vicinity of Rio, was attacked by yellow fever. A doctor of good repute attended him, and on his recovery demanded a fee of nine hundred dollars. The young engineer remonstrated and threatened to appeal to the courts. But friends who had resorted to these tribunals for redress, advised him to have nothing to do with the law. He acted upon their counsel and paid the doctor's bill.—*Youth's Companion.*

"If you can show me any signs of natural gas on your farm I'll give you a hundred dollars an acre," said a speculator to an Ohio farmer. "Haven't any time to fool with it," was the reply. "You must be a very busy man." "Yes, tolerably. I'm boring for oil down in the swamps, the boys have struck a salt-bed just back of the barn, and the old woman's out with a witch hazel rod locating a couple of coal mines. We can't fool with gas afore next year."—*Wall Street News.*

NEW CONSUMPTIVE CURE.

Its Methods and Results Described by a Medical Periodical.

A large share of professional and public attention has quite recently been directed to the administration of gaseous enemata for the treatment of blood poisoning and of affections of the respiratory passages. The object in view is to supply to the venous circulation an antiseptic, such as hydrogen sulphide, in sufficient doses to be effective—a result impossible when supplied directly to the arterial current, a plan which would poison the patient. Hydrogen sulphide in far less than sufficient doses would suffocate the patient; taken by the stomach, it would produce other serious results. Administered by the bowels, however, and entering the venous current already deteriorated by organic refuse, it is quickly eliminated by the respiratory tract, which thus becomes subjected to its beneficial local antiseptic effects without subjecting the system at large to injury, as when thrown into the arterial current. In other words, the parasite is killed, without killing the individual. Its beneficial effects in phthisis are explained by the action of the gas on the suppurative and septic surfaces, and not by any influence on the bacillus tuberculosis; the consumption proper, the exhaustion, being due to the suppuration and to the consequent septicemia, and not immediately to the bacillus, which, while it produces the destruction of tissue, does not produce the morbid phenomena. The method of administration utilizes the discovery announced by Bernard in 1857, that toxic materials introduced into the economy through an organ at a distance from the arterial system could not penetrate into the arterial system because it is eliminated before that system can be reached. Volatile substances are eliminated by the pulmonary alveoli.

July 12, 1886, Dr. Bergeon communicated to the French Academy of Sciences the results of several years' investigation into the method, and Prof. Cornil also presented a later paper on the subject.

Various antiseptic gases and vapors have been tried, but abandoned on account of local irritant action, but a mixture of carbon dioxide (carbonic acid gas) and hydrogen sulphide (sulphuretted hydrogen) is entirely harmless when properly used and completely deprived of atmospheric air. The method has up to the present been used upon about one hundred cases in this city without any untoward effects, so far as known, except in one or two instances, one of which was due to a leaky bag and another to incorrect administration. It is, perhaps, too soon to decide positively on the therapeutic value of the new method, but it seems in the experience in this city to have the special quality of diminishing night sweats and improving the appetite.

In Bergeon's cases the trifling expectations of those apparently practically cured continued to contain bacilli. This fact may be taken both for an indication that the immediate danger in phthisis is less from the bacilli than from the septicemia which they set up, and as an indication that this protective treatment, when successful, should not be discontinued until the general healthiness of the tissues is sufficiently restored to resist the further development and sustenance of the bacillus tuberculosis.—*Philadelphia Polyclinic.*

WATER CARVINGS.

Some Specimens of the Gigantic Work Done by Nature's Sculptor.

We are accustomed to associate such gigantic water-carvings as the Colorado canyon and the Niagara gorge with almost inconceivable periods of time, yet instances are numerous of the wearing from the solid rock of gorges hundreds of feet deep by two or three centuries only of work. Lyell mentions the case of the Simeto, in Sicily, which had been dammed by lavas in 1503. In two and a half centuries it had excavated a channel fifty to several hundred feet deep, and in some parts forty to fifty feet wide, although the rock is a hard basalt. He also describes a gorge in decomposed rock, near Milledgeville, Ga., that was at first a mud-crack a yard deep, but which, in twenty years, was 300 yards long, twenty to 180 feet wide and fifty-five feet deep; and Liais describes a similar gorge, of twice the length, in Brazil, made in forty years. But it is in the low lands bordering rivers that the flood-artist finds the plastic material that may be molded with each passing season. With high water the streams rapidly wear into earthy banks, commencing new bends or cutting off old ones, and even opening new channels for discharge. The great and turbulent Hoang-Ho is noted for its devastations, says Dana. In 1850 it emptied into the Yellow sea; now this mouth is dry and it has a new channel opening to the Gulf of Pechele, nearly 300 miles north of its former outlet, and it departed from the old channel more than this distance from the coast. This is the last of many changes, back and forth, recorded by the Chinese during the past 3,000 years.—*Arkansas Traveler.*

—Dr. Holmes says that when he was in England he insisted upon measuring some large elms to compare them with Boston elms. About sixteen feet around the trunk is the measurement of the Boston Common elm, and from twenty to twenty-five feet is the ordinary maximum of the largest trees. He found an elm in the grounds of Magdalen College which measured twenty-five feet and six inches.—*Chicago Times.*

SMILES TO THE FRONT.

Sage Remarks of a Devout Believer in Cheerfulness and Hopefulness.

Among army people an order is obeyed implicitly and unquestioningly. If the commanding officer orders "sappers and miners to the front," or "women and baggage to the rear," or "theirs not to reason why, theirs but to do or die," and in this way victories are won and good order maintained. What a delightful thing it would be if some cheerful commander should cry out with stentorian voice, "frowns to the rear," "smiles to the front," upon our streets and highways and byways. There is a good bit of Christian science, or philosophy, in looking happy, regardless of your individual feelings. Why should we visit our woes upon our fellows? Why should we draw down our faces and purse up our lips, or render others uncomfortable because we chance to be? It is wonderful to watch the effect of one bright spirit, even in a horse-car. Every one is solem. The banker, who is one of the most agreeable men in the world in his own house, is meditating, with a frown on his handsome face. Some stock is booming and he is thinking seriously of his next move. The lawyer, with his bag, gives a sharp look about the car, produces his nickel, and proceeds to bite his mustache, looking judicially grave. The woman opposite scans her neighbor and settles herself down with hard lines on her face. There is no one there she knows. Why should she care? And so it is in all the cars. People look like victims going to the dentist, or mourners at a funeral, where they must go, but do so under protest. Now let a bright man enter with a smile on his face, a cheery word on his lips as he gives the conductor his fare, and a show of amiability which touches every one; what happens? Faces begin to shorten, smiles peep out like sly snowdrops after a hard winter, and every one, no one knows quite why, feels happier. Cheerfulness is contagious, and as the world goes on and we each have our pilgrim's pack, seen or unseen, upon our backs, why not smile and make the best of things?

A school of expression for the human countenance might benefit all mankind and react upon the physical condition of posterity. As a devout believer in cheerfulness and hopefulness, the *Globe* invites all its readers to cast aside the grimness born of hardship, fear and necessity, and in its place cultivate the presence which attracts, the amiability which endures and the goodness of heart which finds something to be grateful for every day and something worth living for. In short, let us have cheerful faces to the front.—*Boston Globe.*

MEASURING SUNSHINE.

An Instrument Which Indelibly Records Every Gleam of Sunlight.

There was a time, not many years ago, when the sun might shine and shine with all its might, and yet leave no scientific record of its presence beyond the effect of mere heat shown by the thermometer. Nowadays all this is changed, and there are scattered over various portions of the country instruments which catch every gleam of bright sunlight and write it down indelibly, so that by looking at the picture presented we may see at a glance whether such and such a day was really fine or cloudy. The contrivance by which this is effected is exceedingly simple, consisting as it does of nothing more than a solid glass ball set on a pedestal with a surrounding frame in which to place at a suitable angle a little strip of blue cardboard. The glass ball plays the part of a burning mirror, and when the sun shines brightly the rays are focussed upon the strip of cardboard, where the effect is seen in a scorched patch of more or less distinctness. As the relative position of the sun changes the scorch changes, too, so that at the end of a bright, sunny day the picture on the card consists of a long scorched line. By measuring this line we get a record of the number of hours' sunshine prevalent during the day. The instrument, although commendably simple, has one great drawback. If the brilliancy of the sun's rays be shrouded even to a very small extent by mist or by a thin veil of cirrus cloud the heat produced is insufficient to produce a burn on the card.—*Manchester Examiner.*

Sandwich Island Dress.

Not the least interesting features were the large number of native women in procession, in black, of course; they wear holakors, a dress that falls direct from the shoulders, like a Mother Hubbard, a convenience in this warm climate. They affect bright colors, blue and scarlet. They wear a le, which is a necklace of bright scarlet or brilliant yellow flowers, or of polished kukui nuts. The men have hat-bands of flowers or of peacock feathers. I see, by the way, that a magnificent peacock feather cloak is being made for Queen Kapiolani, who will visit the East before long. Feathers seem to have been an important feature in the Hawaiian apparel. The yellow cloaks were made of feathers plucked from under the wing of a certain bird, only two of them on each bird. A chieftain's helmet which I have seen is covered with gorgeous red feathers surmounted by a yellow crest. The length of the feather capes indicate the rank of the wearer.—*Cleveland Leader.*

—One of the youngest murderers on record is a seven-year-old lad at Charleston, S. C., who calmly stuck a fork into his baby sister's head because the child cried and he wanted to quiet it.—*Chicago Times.*

THE PRESIDENT'S MAIL.

Letters From All Sorts of Petitioners, Their Wives and Children.

The President's mail contains an average of from one hundred to one hundred and fifty letters a day from persons whose claims for pensions are pending before the department. These people address the Chief Executive in the belief, probably, that the Pension Office is next door to the White House, and that theirs is the only letter he may have received in a week.

About one-half of these letters are sent to Mrs. Cleveland. The writers in such cases are usually the wives or daughters of the petitioners. Some of them bestow upon Mrs. Cleveland such titles as "Her Majesty," "Empress" and other appellations of royalty. There are few of the letters that do not contain some touches of human nature. They are evidently written in the sincere belief that Mrs. Cleveland will assist them if her sympathies can only be aroused. With this object in view a great mass of detail is set forth in the communication, which, together with the obscure chirography and bad spelling, make its understanding a matter of no inconsiderable time and labor.

It may be said in this connection that neither the President nor Mrs. Cleveland is even aware of the existence of these letters. They are opened by an unromantic and unsentimental clerk at the Executive mansion, from whose hands they fall into the waste-basket and are never heard of again.

The women who address Mrs. Cleveland furnish her with suggestions as to the better method of presenting their claim to the President. One of the plans which a perusal of the letters show that all women hold in common is for her to wait until Mr. Cleveland has had his supper and then, when he is enjoying a quiet smoke in the parlor (*sic*) bring the matter to his attention. Many of them tell her that this is the hour of the day when a man is most amenable to argument, and that they (the writers) prefer this as the safest time for presenting their own requests.

The applicants for pensions, who write to the President, are, as has been said, old soldiers, who, like the feminine part of the family, are sadly deficient in the principles of even an elementary education. They write, too, in a more vigorous style than their helpmeets, and their language is sometimes of so robust a nature that it frequently provokes a smile. For example, an Illinois man who addresses the President in a letter received to-day says:

"The pension officials tell me to get corroborative evidence from some of my comrades. I want to tell you it's a hard matter to get evidence from men who go into an action and never come out again," and then he continues by saying that his company went into the Wilderness a hundred strong, and at the end of the seven days' fight there were but nine of the number who were left to tell the tale.

Sometimes the letters are written by children, who begin in this fashion: "Dear Mr. President: I am a little girl only ten years of age. My papa does not know I am writing this letter. If he did he would not permit it." Then follows a pathetic tale of want and misery, touching enough in its simple style of treatment, but rendered doubly so by the fact of the writer's youth and innocence.

Several months ago one of these touching missives chanced to reach the President's eye. Its simple pleading touched a sympathetic chord in the President's heart. The little miss begged the retention of her father, a Republican, on the board of medical examiners in the New England town in which their home was located. She said he was very old and dying of an incurable disease. The position paid him a salary of about \$1,200 a year, and in view of the fact that he could no longer practice his profession the foregoing sum was their only source of income. The letter concluded naively in these words: "Papa must not know about this. It must be a secret between you and me. If you decide to keep him mark an X on the back of the inclosed postal card and then I will know that you are going to grant my wish."

The President sent the letter and inclosure to Commissioner of Pensions Black, with this indorsement: "If there are no charges against the examiner in question you will oblige me by retaining him in his present position."

General Black investigated the matter, and found that the examiner was not an old man, but, on the contrary, a thirty-year-old fellow scarcely thirty years of age, and that so far from having "a little girl only ten years of age," he was not even married.

The telegraph after this couldn't carry his dismissal quick enough to him, and since that time letters from little girls who write without their papa's knowledge are incontinently destroyed as "fakes" pure and simple.—*Washington Cor. N. Y. Herald.*

—By the use of a carbide of iron and an improved form of furnace, a resident of New York is able to produce sodium at a very low cost. If the inventor's claims are found to be correct in practice, it is difficult to estimate the importance of his invention. Cheap sodium means cheap aluminum, and when once aluminum can be obtained at a low cost its applications will be infinite. It must not be forgotten that every clay bed is an aluminum mine.—*Chicago Times.*

—A pig's tail is of no more use to the pig than the letter "p" in pneumonia.—*Harper's Bazar.*

DAKOTA BANKING.

How the People of That Territory Stand by Their Friends.

I ran across a New York man the other day who is largely interested in the banking business of Dakota. The conversation drifted into a discussion of the character of the people out there. "They may be rough in their manners," said he, "and uncouth in their ways, but they stand by a man when he is in trouble and they never forget a friend. I had an opportunity," he went on, "to test this trait many years ago. The bank of the town where I was staying found itself greatly embarrassed one fine day by the failure of its principal correspondent in the Territory. This fact became known late in the afternoon of the day that the news of the failure reached the town. A run on the bank the following morning was inevitable. To meet it there was but six thousand dollars in the vaults. The remainder of the assets could not immediately be turned into ready cash. The president of the bank was at his wits' ends. He didn't know what to do. Morning came and he decided to close the bank. He was about to give the necessary orders when in walked a committee of the leading merchants of the place. They asked for an explanation of the situation. It was given to them and likewise an opportunity to look at the books. A short examination sufficed to show that the bank was only temporarily embarrassed. They said to the president: 'You open the doors at ten o'clock as usual and pay the depositors; we'll see you through this thing.' 'But how are you going to do it?' said the president; 'I have but six thousand dollars here and there are at least thirty thousand dollars in deposits to be met. Half of that sum is clamoring on the sidewalk now.' 'Never mind, you open the bank and go ahead,' said the committee, 'and we will see you through.'

"Well, the bank was opened and in rushed the depositors and out went the money. The pile of greenbacks on the cashier's desk grew smaller and smaller and the crowd of depositors continued to increase with every minute. Still the paying at the teller's window went on. On the sidewalk the people who had drawn their money were met by some of the merchants who had promised to see the bank through. 'What are you going to do with your money?' they would ask. 'I don't know,' came the answer. 'Suppose you leave it with us; you know our house and know that we are responsible. We will give you a note and so much interest.' To the farmers (for the majority of depositors were farmers) the money in their pockets where it drew no interest was of little use; they preferred, of course, the notes and were without difficulty persuaded to part with their money. As soon as they had received the money the merchants would deposit it in the bank. The same money was paid over the counter three times or oftener in the course of the day, and when the bank closed at three o'clock in the afternoon it had in its vaults as much money as it had started with in the morning, and with \$6,000 it had paid over \$20,000 of deposits. The promptness with which it met the demands of the depositors staid the panic and the next morning there was not the slightest indication of a run. This is an absolutely true story," said my informant in conclusion, "for I was myself the president of that bank. Now can you match that by any thing in the East?"—*Washington Letter.*

RIGHTEOUS WRATH.

A Peaceable Colored Man's Emphatic Objections to a Shower-Bath.

"I spize ter see er white pussun meek er fool o' hisse'f," said a bench-legged negro, who, "batting" his eyes with that slow movement of contempt which the negro so well understands, stood leaning on a goods box.

"What's the matter now?" some one asked. "It seems that you are always in trouble."

"Who is?" turning upon his questioner and "batting" his eyes slower than ever.

"You."

"Yer ain't sho'ly talkin' ter me, sah, fur I nebber has no trouble widout some pussun comes er shovin' it on me. Gwine down yander jes now an' er blame white man come er squintin' water on me wid his ole Ingun rubber pipe. Wan't doin' er thing ter him gwine alaung tendin' ter mer own business, when he come er squintin' dat water on me; an' it wasn't wa'm, nuther, I ken tell yer dat."

"What had you done?"

"Done nuthin', I tells yer. Went er laung by his old sto' whar da wuz er pillin' up er lot o' haug's jowls, an' thinkin' ter merse'f dat da'd go fast rate wid er lot o' greens I picked up one o' de blame things an' gunter zamine it, an' he squinted his ole water on me. I ain't 'roun' pickin' up jowls," he continued, taking his hat by the brim and shaking the water off. "Got plenty o' jowls at home, de Lawd knows. Make me mad ter see er pussun make er fool o' hisse'f. I doan ker if he is white. Come er squintin' his ole water on me."—*Arkansas Traveler.*

—Wife of a rich rural Californian at her first grand dinner. The Colonel offers his arm—"I am to have the pleasure of taking you out to dinner, Mrs. A." Rich Rural Wife—"Go 'long with you; my husband's here; take your own wife out!"—*Puck.*

—Young Hostess—"I must show you my baby, Mr. Brown; are you fond of them?" Brown (absent-minded)—"Yes—oh, yes! But I haven't eaten any lately."—*Golden Days.*

EARLY MATURITY.

Two Safe and Common-Sense Methods Which It Can Be Accomplished.

The question of early maturity in breeding of farm animals is one of special importance, but early maturity should not mean a young animal bred against such an animal every time he has a chance. The butcher who for this lean meat is what the farmer pays for. If the muscle is filled with sufficient fat to render the whole lean, the true aim has been reached. The production of superior beef mutton. If it be hog, a large amount of fat is admissible, since the lean is nearly as valuable as the lean meat.

This early maturity, with a proportion of muscle, is accomplished first, by selecting animals of maturing breeds, and second, feeding the purpose in view. In summer pasture, grass and clover, containing nutriment in the proper degree, is to say, the mixed grasses are perfect food, nourishing all alike, of the animal economy. Special foods are given they must contain the elements of bone, muscle and fat in proper proportion, and the young steer or lamb have had the first full year of life as a staple for seven months as a lamb, the same may thereafter be safely given a larger proportion of Indian corn, the cheapest single food for finishing. Mill stuffs, bran, light barley and cakes are generally cheap and they may be economically used in raising young animals.

Without going into a discussion of perfect foods, many of which are supplying to many practical feeders safe to say that corn meal and high quality weight, in connection with good, sweet hay, comes pretty close to being a food that will nourish parts fully. If oats and light corn are cheap, these may be given, corn so each will constitute one of the whole by weight. If it can be had, two pounds or more a day for each young steer may be worth profit.

What the feeder is constantly in mind, however, is the cost of feeding material. If one kind is and consequently dear, use some containing the component parts near as may be. Then the nearest animal is kept up to full feed, weaning, from birth to the block, the greater the profit; the assimilation of food has been demonstrated, as previously stated in a journal, to be a decreasing ratio amount fed, the older the animal. Besides this, if it takes half as long to eat to supply the average weight of birth to the age of four years, this becomes a heavy charge against current value of the animal at the end and therefore an increasing charge until it is butchered.—*Farm, Field, Stockman.*

—Egg Slaw: Chop finely some white cabbage. Let it lay in water an hour before using. Drain the water from it. To about three cups of cabbage add a tablespoonful of sugar, one teaspoonful of salt, one French mustard or of mixed mustard. Af er mixing well together, add well beaten eggs in a cup of vinegar, a little cayenne and one spoonful of butter. Pour this over cabbage; toss well together and serve.—*Toledo Blade.*

—Some trees are valuable for their timber, but will yield a come while growing. The sugar maple is one of these. Its timber is high for both fuel and lumber. Taken from it during the brief season sugar making makes no perceptible reduction in its vitality, or checks growth, and the cost of the sugar, made from it is small. The essary fuel is supplied by its branches, or branches which are cut out, and the work comes out when very little else can be done on the farm. There is no expense in planting or cultivation. Expensive planices are not required, and they can all be done at home. Maple sugar known to be pure always a ready sale at a good price.—*Farmer.*



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