

COTTON TRADE-SCHOOLS

IMPORTANCE SINCE THE DEVELOPMENT OF MILLS IN THE SOUTH.

Start of a Movement Which Promises to Produce Better Skilled Labor—How Workmen Are Trained For the Textile Industries—Designing Taught.

The development of the cotton mill in the Southern States has been so rapid in the last ten years that whole sections of the land have been completely changed in an agricultural and industrial sense. The most important effect of this change has been the employment of Southern people in the mills who formerly made an uncertain and inadequate living in tilling the soil. In the Carolinas a measure of prosperity has been obtained in the cotton mill districts never before realized, and the growth of the new industry has without doubt been a great benefit to the sections in which the mills have been established. The Southern movement of the cotton mills is no longer an experiment, but a demonstrated success, and the cotton manufacturing of this part of our country promises to develop indefinitely.

One of the problems that confronted, and is now confronting, Southern mill men is that of the relative supply of skilled labor. But there is the beginning of a new era now which promises to produce better skilled labor in the South, and to make up for a deficiency that has long been apparent to close observers. If the South is to be a great cotton manufacturing center, trade and textile schools and colleges are almost essential. The remarkable construction of mills and spindles in the South in the last few years has more than ever emphasized the importance of this. With more spindles the demand for skilled labor grows more urgent. Under past conditions the development of the cotton manufacturing industry of the South would be seriously handicapped, and no one realizes this more than the mill men and public educators.

One of the noteworthy features of the South's industrial progress is the establishment of trade and industrial schools, and their future promises as much for the South as the cotton mills which first created a demand for them. The mills hardly provided the necessary training and education that were needed for the skilled worker in the textile world, and the Southern trade schools were founded to make up for this deficiency. The trade schools of New England and of Germany had demonstrated the value and necessity of such institutions for textile manufacturing centers, and the fact that the South has awakened to the responsibilities which have come in the wake of her cotton mills argues well for her future industrial career. The training of workmen for textile mills, and of engineers for operating the machinery, is a work that is now being profitably done in several industrial schools of the South, and the curriculums of these institutions are liberal enough to prove of value to the practical and theoretical workers in the fields.

There are practically only two well-equipped cotton trade schools in the South to-day, but they are the beginning of a group of institutions that have been planned (and must eventually spring up all over the cotton belt) for the technical training of students in spinning, weaving, carding and designing. The oldest and first of these cotton trade-schools is connected with the Georgia School of Technology, at Atlanta, and it is so complete in all departments that it presents to the students the very latest and most improved features of mill construction, and gives a thorough course in all departments of cotton manufacture and textile spinning and designing. This school was first opened in the season of 1898-99, and it is called "The A. French Textile School," because of the endowment of Aaron French, of Pittsburg, who made good the deficiency of funds necessary to secure the \$10,000 appropriation of the State on the condition that a like sum should be raised by the friends of the institution. The school is pretty thoroughly equipped for the work it has in view, and it will give to the South in a few years a crop of earnest, educated, skilled textile experts that should greatly broaden the cotton-manufacturing industry of that section.

The other textile-school of the South is the Clemson College Textile School, which opened nearly two years ago, at Clemson, South Carolina, for the purpose of supplying that State with more experts in textile manufacturing. This school aims to supply a general training for students wishing to engage in manufacturing wool, silk, and linen products. In the Georgia school the aim is simply to train experts for cotton weaving and designing. The equipment of the South Carolina institution is also complete enough to give the students a thorough practical mill and laboratory experience. The carding and spinning departments are as thorough as could be desired, and the dyeing and weaving departments have no superior. Here the latest methods are taught according to the most approved systems, and the students are brought into daily contact with the best workmen the country affords.

The idea of both of these textile schools is to provide the students with a broader understanding of the textile manufacturing industry than they can pick up in the mills. In the latter their knowledge is apt to be limited to one or two departments, and there is less chance for learning in a broad sense all there is to know in the manufacturing of textile products. The student who understands mill practice and all kinds of machinery, and the relative importance of different systems of dyeing, spinning and weav-

ing, is much more apt to develop and improve an industry that to-day occupies the attention of all who have the future of the South at heart. Mill manufacturers welcome the appearance of the textile school in the South, and they admit that the studies pursued there prepare the students for better work than actual mill practice without the preliminary training and study.—Harper's Weekly.

A Clear Case Against the Boy.

"I had a funny dream last night," said the young man to his father, whose income was \$10,000 an hour. "It seemed that you had decided not to build libraries or universities that would serve to perpetuate your memory, but, instead, had made up your mind to withdraw from business—to just pull out with your \$20,000,000, and let somebody else have the same kind of a chance that you had when you started, and the richest man in the country was worth only about \$300,000.

"Then, after throwing off all these cares you got to filling your pockets with money and going around hunting for people who really needed a lift, and every little while it seemed that you would run across somebody who was just about to be compelled to give up the struggle, and you'd give him enough to set him on his feet, or, at least, to make him comfortable in his last hours, and then you'd stand back and smile and seem to enjoy yourself seeing the joy you had given to others. Sometimes you would fairly yell with delight at the good things you had done, and one of these outbursts seemed so real that it actually woke me up.

"Great heavens!" the troubled magnate exclaimed; "that wasn't a dream. Your mother had an uncle that went insane. I've always been afraid I might crop out again, and now my worst fears are realized. Here—Help Help!"—Chicago Record-Herald.

The Ameer of Afghanistan.

Since the publication of the biography of the Ameer of Afghanistan the British Indian Government has kept a watchful eye on his doings, as several recent acts of his have thrown doubts on the sincerity of his devotion to British interests.

First there was the prohibition of the export of horses to India and the prohibition of the imports into his country of Indian salt. Then there came the occupation of certain strategic points on roads near the frontier by which the British armies advanced into Afghanistan in past wars. The latest incident to call attention to the Ameer's attitude is the fact that he has not drawn his subsidy of eighteen lacs of rupees for the past year, which is paid him annually by the British Indian Government. The Indian Finance Minister has, however, made provision in case the Ameer should wish to touch his subsidy, and the money is lying at his disposal in the Indian Treasury.—New York Sun

The Electric Eel's Victim.

At the Zoological Gardens a large electric eel was swimming in its tank with more activity than usual, when a big crocodile fell into the water, and in its efforts to get out made a disturbance of the surface, which attracted the attention of the eel. The eel turned round, swam past it, discharged its battery at about eight inches off, and the crocodile instantly stopped stone dead. It did not even move its antennae after. The eel then proceeded to swallow its victim, and the narrator goes on to point out the curious circumstance that the fish, which weighed about twelve pounds, should find it worth while to fire its heavy artillery at a creature an inch and a half long, when it could easily have swallowed it sans facon.—Chamber's Journal.

Minerals in the Land of Oranges.

Florida is rich in minerals. In addition to phosphate, of which the world already knows, she has immense deposits of clays of every kind—kaolin, ocres, fire and aluminum clays, gypsum and Fuller's earth of great extent and finest quality. She has stone excellent for building purposes and a soft magnesian limestone that produces a cement in every respect equal to the best imported. Iron of high grade and value is known to exist in several localities; so also are indications of petroleum, natural gas and soft coal and asphalt to be found in several portions of the State; and yet with one or two exceptions the fields containing these ores are undeveloped.—Baltimore Sun.

The Drawbacks of Polished Floors.

A polished floor in a workshop seems rather out of place, and in the case of old people it is certainly a dangerous luxury, says the Westminster Gazette. According to the evidence given at an inquest on an aged inmate of the Holborn Union Workhouse, the death was caused by slipping on a polished floor. The polish undoubtedly locks well and keeps clean, but it is trying at times. Many a graceful entrance to a room has been converted into a wild and ludicrous scramble by stepping on a rug or mat lying on the slippery surface. Instead of grasping your host's hand you land on your own back or on his front. For old and feeble people the exercise is extremely risky.

Sensible Germans.

The Germans are not too proud to learn from other nations. They are now buying American locomotives with a view to ascertaining in what respect they differ from their own make. The administration of the Royal Bavarian Railway have ordered four engines from the United States, and the German manufacturers are agitated on this account.—London Engineer.

RUBBER HISTORY.

Man That Came With Columbus Saw Haytians Playing Ball.

The world was a long time learning the uses and value of rubber. For two centuries after the Spaniards saw the gum in the hands of natives of the New World it was little more than a curiosity. Old Herrea, who went with Columbus on his second voyage, made a note of an elastic ball which was molded from the gum of a tree. At their games the nude Haytians made it bound high in the air. The Aztecs were familiar with the gum and called it *ule*, and from them the Spaniards learned to smear it on their coats to keep out the wet. They had crossed the seas for gold, and never dreamed of a time when the sticky milk the uncouth Indians drew from strange trees would be worth more than all the treasures of the hills. (On February 23, 1899, a ship carrying a cargo of 1167 tons of rubber valued at \$2,210,000 sailed from Para for New York, leaving 200 tons behind on the wharf.)

Jose, King of Portugal, in 1555, comes down to us as the wearer of a pair of boots sent out to Para to be covered with a waterproof gum. Yet 300 years were to elapse before a Connecticut Yankee should make a pair of boots of rubber which would not decompose. Dr. Priestly, author of a work on "Perspective," now forgotten, recorded that *caoutchouc* (pronounced *kachook*) was useful in small cubes for rubbing out pencil marks—hence the name rubber. The India linked with it refers to the savages who gathered it in the Amazon wilderness. Dr. Priestly's cubes were half an inch long and sold for three shillings, or seventy-five cents apiece. A stiff price for the finest rubber to-day is \$1 a pound. Its price for ten years has ranged from sixty-two cents to \$1.09. The conversion of the tree to useful purposes made but slow headway. The first waterproof cloth in 1797 was the work of an Englishman. It was tentative, and of course it would not stand heat. In 1823 Charles Mackintosh, of Glasgow, discovered naphtha, and, dissolving rubber in it, produced a varnish which, when spread on cloth, made it really impervious to water. As late as 1830 the importation of rubber into England amounted only to 50,000 pounds. In 1859 no less than 16,075,584 pounds were consumed in that country, and the consumption in the United States reached 51,696,737 pounds. Most of the rubber used in the world still comes from equatorial South America, and the forests where the Indians gathered *ule* are as dense to-day and almost as little known to white men as in the time of Cortez.—H. E. Armstrong, in *Ainslie's*.

Now It's the Brooklyn Race.

"Have you ever been over the big bridge?" asked a Wall Street man the other day.

"A few times; why do you ask?" was the reply.

"Well, I had to go over to Brooklyn the other day. First time I had crossed the bridge in years; and I made a discovery. I don't mean that I discovered the bridge or Brooklyn, but I did find the Brooklyn face.

"Talk about the bicycle face or the automobile squint, they are not a marker to it. If you want to see it reflected on a few hundred thousand features, just take a stand between the 'L' ticket booths and the first stairway some time between 5 and 6 o'clock at night.

"As the crowds sweep to the ticket booth they appear sane and clothed in their right mind; but once the ticket is bought, the transformation begins. First a sort of hunted expression steals over the features; then the eyes are narrowed to a squint, but as the person nears the ticket chopper they gradually widen and begin to roll wildly. The teeth are firmly set, the chin tilted outward and the head is thrown forward. A slight inflation of the nostrils just before the final rush is made and all is lost in the whirling vortex on the stairway."—New York Mail and Express.

Stale Bread Economy.

A Long Island man who was showing a friend a couple of hunting dogs at his place the other day locked up as he heard the sound of approaching wheels. "Here's the bread man," he remarked, and as his friend gazed in surprise at the open cart laden with bulging sacks, thinking it the strangest baker's outfit he had yet seen, the owner of the dogs bought a barrel of the merchant's stuff.

"It's for the dogs, you know," he explained as the wagon drove off. "Broken up and mixed with other things it makes good food for them. That man does very well with his stale bread business. He buys the bread at a low price in the city when it is too old to sell to customers there. But it hasn't reached the dog food stage, then, by any means. He first retails it as long as he can to the Italians who work on the roads and do all the hard labor hereabouts. I believe they waste it down with beer of about the same state of freshness. Well, when the bread gets so stale that even the Italians can't eat it, it is ready to be peddled around among the villages in the neighborhood. The farmers buy it to feed their pigs and chickens, and a good many people use it, as I do, for their dogs, so there is no loss or waste to cut down the dealer's profit."—New York Tribune.

A Fearless Rider.

Lord Roberts is a fearless rider, and usually well in at the death, but his eminence as a hunting man depends on his splendid eye for country, and his unrivaled knowledge of horseflesh, and not on mere dexterity. Lord Roberts has had his fair share of "croppers," but, thanks to his light, steel-built frame, he has never come to any serious harm in the hunting field.

JEFFERSON AS AN INVENTOR.

Opposed to Patents, He Gave to the World Many Proofs of His Ingenuity.

Thomas Jefferson was himself an inventor, but, consistent in his belief in the natural right of all mankind to share useful improvements without restraint, he never applied for a patent.

His first original device was a folding chair, which he used to carry to church in early days, when services were held in the court house at Charlottesville and the seating conveniences were insufficient. His grandson tells us how he would "mount his horse early in the morning during the latter years of his life, center down the mountain and across the country to the site of the university and spend a long day there, directing the work, carrying with him a walking stick of his own invention, now familiar to all, composed of three sticks, which, being spread out and covered with a piece of cloth, made a tolerable seat." Mr. Bacon, his overseer, in his reminiscences says: "His servants came with him and brought a seat, a kind of camp stool of his own invention. After Mr. Jefferson got old and feeble a servant used to go with him and carry that stool so that he could sit down while he was waiting for anybody, or attending to any work that was going on."

He invented the revolving chair, now a familiar and necessary article of furniture in all offices and counting rooms. The Federalist newspapers used to call it "Mr. Jefferson's whirligig," and declared that he had devised it "so as to look all ways at once."

He also designed a light wagon, or sulky, with a comfortable seat and two wheels, with which he drove around the country when he was too feeble to ride horseback.

Mr. Jefferson invented the copying press. He writes to Mr. Madison in 1787: "Having a great desire to have a portable copying machine, and having studied over some experiments with the principle of large machines made to apply in the smaller one, I planned one in England and had it made. It answers perfectly. I have set a workman to making them, and they are of such demand that he has his hands full. I send you one. You must expect to make many essays before you succeed perfectly. A soft brush like a shaving brush is more successful than a sponge." He also sent a copying press to the Marquis of Lafayette as a present.

Another of his inventions was a hemp break, which he says "has long been wanted by the cultivators of hemp, and as soon as I can speak of its effect with certainty I shall describe it anonymously in the public papers, in order to forestall the prevention of its use by some interloping patentee."

He invented a pedometer to measure the distance he walked. He sent one to James Madison, with the following explanatory letter: "To the loop at the bottom of it you must sew a tape, and at the other end of the tape a small hook. Cut a little hole in the bottom of your left watch pocket, pass the hook and tape through it, and draw between the breeches and drawers, and fix the hook on the edge of your knee band, an inch from the knee buckle, then hook the instrument itself by a swivel hook, on the upper edge of your watch pocket. Your tape being adjusted in length, your steps will be exactly measured by the instrument."

His most important invention was a plow. Mr. Bacon, his overseer, says: "He was very ingenious. He invented a plow that was considered a great improvement on any that had ever been used. He got a great many premiums and medals for it. He planned his own carriage, buildings, garden and fences, and many other things. He was nearly always busy upon some plan or model."

Jefferson's plow received a gold medal in France in 1790. During his European tours he had been struck with the waste of power caused by the bad construction of the plows in common use. The part of the plow called the "mouldboard," which is above the share and turns over the earth, seemed to him the chief seat of error, and he spent many of the leisure hours of his last two years in France in evolving a mouldboard which should offer the minimum of resistance. He sent the original design to the Royal Agricultural Society of the Seine. The medal which they awarded for it followed the inventor to New York, and eighteen years afterward the society sent him a superb plow containing his improvement.—Chicago Record-Herald.

The New Baby-Carrier.

It has made its appearance at last, and it is quite in keeping that Brooklyn should be its birthplace. But what will the comic weeklies do since it has displaced the perambulator?

Passengers on a Fifth avenue "L" train the other night witnessed its advent when a man boarded the train at the Bridge street station. In one hand he carried an umbrella, in the other a sachel, while dangling in front, apparently without human support, was a baby.

The people in the car gaped with wonder, then there was a snicker, followed by a general laugh. For on closer investigation it was found that the child was resting on a wicker seat much resembling the top of a vegetable basket. To this was securely clamped two steel hoops, which held the child in firmly, while a leather strap was fastened to these hoops and passed around the father's neck.

"Say, that feller could give a squaw a point or two on carrin' a pappoose, couldn't he?" remarked a fat man in the corner, and all agreed that he could.—New York Mail and Express.

REACHING THE POLE.

Herr Anschutz-Kampfe Outlines His Own Plan.

At a recent meeting of the Vienna Geographical society Herr Anschutz-Kampfe described as his own a plan of reaching the North Pole, which, however, was suggested some years ago by a Swede, but for the execution of which he is now having a vessel built by German marine engineers at Willhelmshaven. His plan is to reach the pole by means of a submarine boat, passing under the ice of the Arctic ocean. In his address, as reported by the Geographical Journal, Herr Anschutz-Kampfe said: "The main factors affecting the practicability of the scheme are: First, the extent of the separate ice fields in the polar sea, and, secondly, the depth below the surface to which the ice reaches. From extensive study as well as personal observation the speaker had arrived at the conclusion that the average maximum depth of the pack ice may be taken to be 50 feet, while the mean thickness does not exceed 16 to 20 feet. Land ice reaching in the form of icebergs a depth below water surface of several hundred feet may, he thinks, from its virtual absence from the seas in question, be left out of consideration, while our present knowledge of the depths attained by the polar basin justifies the opinion that reefs of rocks rising towards the surface of the ocean are not to be expected. The proposed vessel will be capable of descending to a depth of 160 feet, at which it will be entirely removed from the influence of cold, storms, and ice-pressure, and the way to the pole will be therefore open. The length of time during which it will be able to remain below the surface is calculated at a maximum of fifteen hours, which at the moderate rate of 3 knots allows it to cover a distance of 50 miles, whereas the combined experience of polar voyagers shows that continuous fields of pack-ice never exceed a maximum diameter of 3 English miles. In the improbable case of no opening being met with within the fifteen hours there remains the possibility of opening a way by blasting at a weak point in the ice, to be indicated without possibility of mistake by the help of the manometer. The risk of collision will be minimized not only by the slow rate of motion, but by the great power of resistance to be possessed by the ship, and in-

dispensable on account of the pressure to which it will be subjected from water. Its form will be that of an ellipsoid of rotation, with a major axis of 70 feet and a breadth of 25 feet, giving a displacement of 800 tons. To obviate rolling the center of gravity will be placed as low as possible. The capacity of the interior will be 3,500 cubic feet, which allows sufficient air for five men for fifteen hours, if carbonic acid evolved being removed by combination with caustic soda. Propulsion will be effected by horizontal and vertical screws, the former of 40, the latter of 5 horse power, this last being sufficient to counteract the tendency to rise; while the motive power is to be supplied by a petroleum motor through the medium of a 220 volt accumulator. One hundred and fifty tons of petroleum will be taken, or more than ten times the quantity needed for the 600 miles' voyage to the pole from Spitzbergen, to which, or rather to the edge of the ice, the submarine boat will be towed. On arrival at the pack the direction of the first open water will be taken by compass, and, the boat being submerged, a course will be steered for it. If, after an hour or so the light shows that an opening has been reached the vertical screw will be stopped and the boat will rise by its own buoyancy and in case of a wide opening or channel leading northwards the voyage will be continued on the surface, giving an opportunity for scientific work. Supposing no gleam of light appears when six hours have elapsed an ascent to the lower surface of the ice will be made with caution and the voyage continued slowly until by the reading of the manometer it is found that a thin place has been reached. Here attempts will be made by blasting to effect an opening, which, however small, will be sufficient to supply air for another fifteen hours; while in the case of failure there will be still time to return to the last opening that has been left, whence the voyage will be prosecuted in a slightly different direction. But both assumptions made—that of an uninterrupted ice field more than 18 miles in diameter, and of one so continuously thick as to defy all efforts at disruption—are entirely contradicted by all previous experiences.—Philadelphia Times.

The Booming South

A Remarkable Increase in All Lines of Industry.

Twenty years ago, by the census of 1880, there were 180 small cotton mills south of the Potomac and Ohio rivers. The 1900 census shows 800 mills with more than 4,000,000 spindles and at least 500,000 spindles more to be added within the next few months in mills now under construction. The most rapid increase in the history of cotton manufacture in the south is now going on. In Georgia alone 48 new mills with 263,676 new spindles and 5,999 looms, representing an investment of \$3,860,000, were put in operation last year. They are all of the latest type, both in construction and equipment, and many of them are run by electricity. During the previous year Georgia built 38 new mills with 278,699 spindles and 4,710 looms, which represented an equal amount of capital. More than 75 per cent of the stock of the Georgia mills is owned by local capitalists.

North Carolina stands next to Georgia in progress, and on the line of the Southern railway alone today no less than 123 cotton mills, representing a capital of \$14,227,950, and consuming 340,132 bales of cotton every year.

Few people realize what this means to the south, not only in giving employment to the people, but in the saving of transportation charges, commissions and other items that go to make

up the profits of the middlemen and the export and import merchants who handle the raw product. This year the cotton crop is said to be worth \$500,000,000 as it comes from the gin. By turning it into plain sheeting its value is doubled, and in raising the grade of the manufactured product to a little better quality the value doubles again, and amounts to \$2,000,000,000.

Nor are cotton mills the only manufacturing concerns that you see nowadays in the south. During the last few years the development has been very rapid in all lines of manufacture to consume the raw materials found on the ground. On the Southern railway, within four states, 1,062 manufacturing concerns have sprung up within the last 10 years. Sixteen are woolen mills, 96 are sawmills, 99 flour mills, 52 grist mills, 58 are furniture factories, 49 are tobacco factories. The furniture industry is one of the most important in the new development of the south. Thirty-nine new factories opened last year in what is called the Piedmont section, where there is an unlimited supply of hardwood suitable for cabinet-making, plenty of low priced labor, fuel and liberal labor laws.

The average man can hear the whisper of a pretty woman further than he can the loudest call of duty.—Pennsylvania Grit.

A Mean Deception

Unkind Trick Played Upon an Unsuspecting and Avoracious Woman.

A flustered young woman, out of breath as though from walking fast, rushed up the steps of the United States mint at Philadelphia the other day and asked to be directed to the bureau of information. "There isn't any," replied the uniformed messenger, a very fat man. "Perhaps I can tell you what you want to know." "Perhaps you can," said the young woman, producing a copy of a frivolous weekly paper. "I want to know if this is true." She pointed to a paragraph which read: "Among the curiosities of collecting is the fact that 1901 cents now bring about \$19 in the coin market." The fat messenger adjusted his glasses and scrutinized the paragraph. While he was thus engaged he began to laugh and showed to others in the department the paragraph. They followed combined roars of laughter. Through it all the young woman stood expectantly fingering four bright, new pennies she had brought with her. Finally the fat messenger regained his breath sufficiently to gasp: "It's a joke. Don't you see? I'll give you \$19 for 1901 pennies, and I'll be a cent ahead of the game. See?" A great light seemed to dawn in the mind of the young woman. "I dare say, it's very funny," she said, "but I don't

think such things ought to be printed." And she made her exit sorrowfully.

Student a Street Musician.

Among the street musicians of Chicago is a young man who plays to earn his living while he pursues his studies in a musical college. He holds a scholarship in the college and is considered a promising student there, but the problem for him is how to maintain himself in a city far away from his little home town in Michigan while he studies in the school. He has no private resources. Each evening he takes his violin and on likely street corners plays to the crowd classical selections usually, and reads around the hat afterward. His dream is to have a studio of his own and give lessons. Then he will give up the street play-thing; but that can't be yet. "I don't care what people think of me," he told a reporter who asked him about his aspirations. "I'm not ashamed of playing in the streets. It is nearly the same as playing in a concert hall for a fee. But all the same I shall be glad when I don't have to do it any longer." The police don't bother the young musician, and his teachers rather admire him for his courage than condemn him. Some day, he hopes to go to Europe to study.