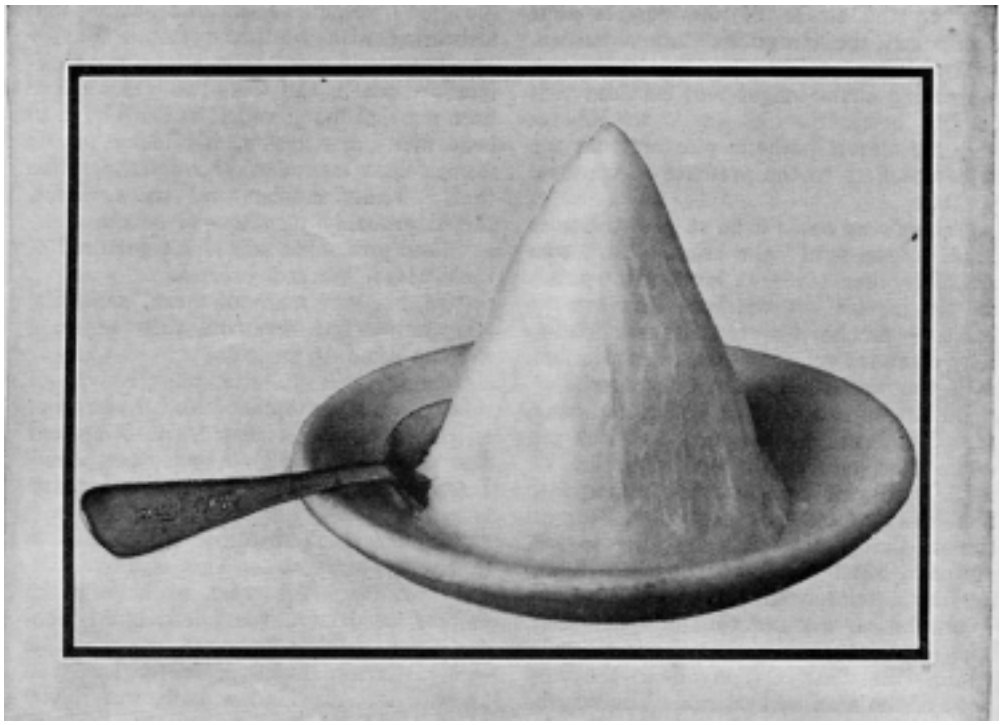


ONE of the by-products of cotton. Cotton-seed oil is largely used by confectioners. The bleached oil goes into some grades of ice cream, in place of milk or cream

THE MEN WHO MADE COTTON

By

EDWARD MOTT WOOLLEY

AMERICAN business offers no more characteristically American story than the story of cotton. It began with the personal adventure of young men in a young country — a few young inventors who imagined great things for cotton, and put their vision into everlasting terms of machinery. It grew to be the theme of a whole national life, and a national tragedy — the Civil War. And out of it sprang a unique phenomenon in our society to-day — the cotton plutocracy of New England. In the following article Mr. Woolley tells the absorbing narrative.

OF all the products of America, cotton seems to be the hardest hit by the European war. At any rate, it is the product that gets the publicity, though perhaps copper, machinery, and a lot of other things are almost as badly off. Cotton is the one romantic product that always stands in the limelight. It has always been so, since the beginning of cotton in the United States.

Last July the South was buoyant with expectation of a great cotton crop and fair prices. The adventures and disasters of past years were put behind, for the world

was fast learning to use cotton. The worst over-productions of former periods were now less than a normal crop.

Then came the thunder-bolt. With all the swiftness of tragedy, the scenery was shifted and the 1914 chapter closed with a bang.

This is not a statistical story; nor a story of foreign trade; nor a technical story of manufacturing. It is simply the human story of the men who made cotton, and who make it to-day.

Go back to the year 1789, when a proposition, something like the paragraph that follows, was privately and cautiously circulated by American secret agents in England:

> A reward of $500 in gold will be paid to any one who will make and smuggle out of England an accurate model of Richard Arkwright's cotton-spinning machine. Every protection guaranteed and the strictest secrecy assured.
>
> TENCH COXE,
> Philadelphia.

Arkwright—oddly enough, an English barber—had invented a machine that did away with the laborious spinning of cotton by hand; but England was guarding the secret. Naturally, she believed in keeping a good thing at home, and rigorous laws prohibited the taking of machinery or models out of the country.

"We'll buy it from you," said Tench Coxe, who was Assistant Secretary of the United States Treasury and promoter of the Pennsylvania Society for the Encouragement of Manufacture and the Useful Arts.

"No," said England; "you can't have it."

Coxe was a statesman and economist. He was perhaps the only man in America at that time who foresaw a future for cotton. He was something of a crank on cotton, and he made up his mind quickly.

"We'll get that spinning-machine!" he told his friends.

England Guards Her Secret

Here in the infant United States there was as yet no cotton industry. In some parts of the South the farmers had garden patches of the puffy white balls, but cotton was not a farm crop. Women spun a little of it by hand, but there were no cotton mills. Ever since Arkwright brought out his machine in 1769, American machinists had been trying to duplicate it, in vain.

There are daring men everywhere, and the American secret agents found a machinist in England who agreed to make brass models and ship them in secret to America. He made the models, but the authorities discovered and confiscated them just in time. The machinist fled.

At Milford, not far from London, lived a callow apprentice named Samuel Slater, employed in the cotton mill of Jedediah Strutt. Richard Arkwright had an interest in this mill, and the Arkwright machine was in use there. Of course, this mill would be scarcely an atom beside the mammoth mills of to-day.

Slater, not much over twenty-one, read about the capture of the brass models, and it set him thinking that America might be a pretty good place for a young chap who knew the Arkwright machine by heart.

The Barber Who Became a Lord

But Slater had a mighty respect for the King and a vast awe for the English prisons. And he knew and feared Arkwright, who was cutting a wide swath in England just then. Incidentally it may be said here that Arkwright traveled in a coach with four horses, always at breakneck speed, which wasn't so bad for a man who earlier in life had been cutting and dyeing hair.

"Lazy Dick," his wife had called him at that time. "Shame on you!" she said. "You are always scheming with worthless machines when you ought to be shaving. You let your family go hungry for the sake of your foolishness!"

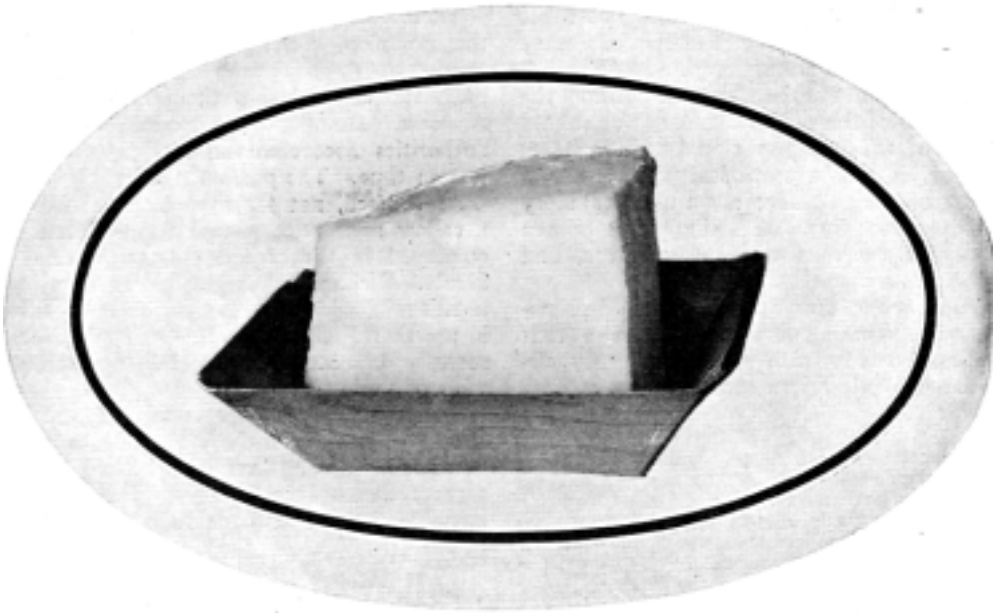
Then she quit him — did this wife of the great Sir Richard Arkwright to be.

But now he was a man to be feared. Slater knew what would happen if Arkwright or Strutt even suspected him of harboring designs on America. So he kept his mouth shut, and one day he quietly disappeared.

However, he played safe, so far as he could. He made no models or drawings, but, with his only capital in his head, took secret passage for the United States. Some six weeks later he came ashore near the Battery in New York.

This is the beginning of the real story of American cotton; for this raw apprentice was destined to become the father of the greatest of all American industries.

Slater meant to go to Philadelphia to see Tench Coxe; but he was almost out of



$25,000,000 WORTH of cotton-seed oil goes every year into substitute lard products — the largest single use for cotton-seed oil. The high grades of these lards have distinct advantages over animal lards, from the standpoint of health

money, and the first thing he did was to hunt a job as a machinist in New York. Shortly afterward he heard that the firm of Almy & Brown in Pawtucket, Rhode Island, was trying to build a cotton mill somewhat along the lines of the Arkwright mills in England; so he wrote and offered his services.

"Come on," was the answer.

But when Slater saw the crude machines Almy & Brown were making, he lost heart.

"They are worthless," he declared. "They do not follow the Arkwright principles, and it would be useless for me to put my time into them."

"Then build an Arkwright machine," proposed Moses Brown.

It took Slater a year, with repeated failures, to do it. But Pawtucket became the cradle of the cotton industry in America, and Almy, Brown & Slater the pioneers in cotton manufacturing as a commercial possibility.

In Pawtucket to-day one may hear a little romance that serves to make Slater more real to us. When he arrived in that town, he was directed to the home of one Oziel Wilkinson for lodging; and, while bargaining at the door, he chanced to glance down, and saw a brown eye watching him through a knot-hole in a panel. The owner of the eye was young Hannah Wilkinson, who, upon discovery, ran away down the hall.

"I swear by the King of England that I'll marry that girl!" Slater told an acquaintance shortly afterward. And he did, in spite of the fact that she was a Quaker and he was not.

The cotton mill of Almy, Brown & Slater used imported cotton from the East Indies and the islands of the Indian Ocean. American cotton had small commercial value because of the difficulty of separating the staple from the seed. This operation was performed by hand, and was very slow and laborious. The foreign cotton with the looser seed did not thrive in our soil.

Whitney Invents the Cotton-Gin

Right here begins the second chapter in this mighty drama of the world's chief clothing supply. At that time the world's foremost material was wool, supplemented with furs.

At Westboro, Massachusetts, there had lived a boy named Eli Whitney, son of a nail-maker. But nail-making did not suit young Eli, so he studied nights, went to

Yale, and graduated. At that time he hoped to become a lawyer. Temporarily he arranged to go to Georgia to act as a private teacher near Savannah. This was in 1792.

But when Whitney reached Georgia he found that some other chap had slid in and cut him out of his job.

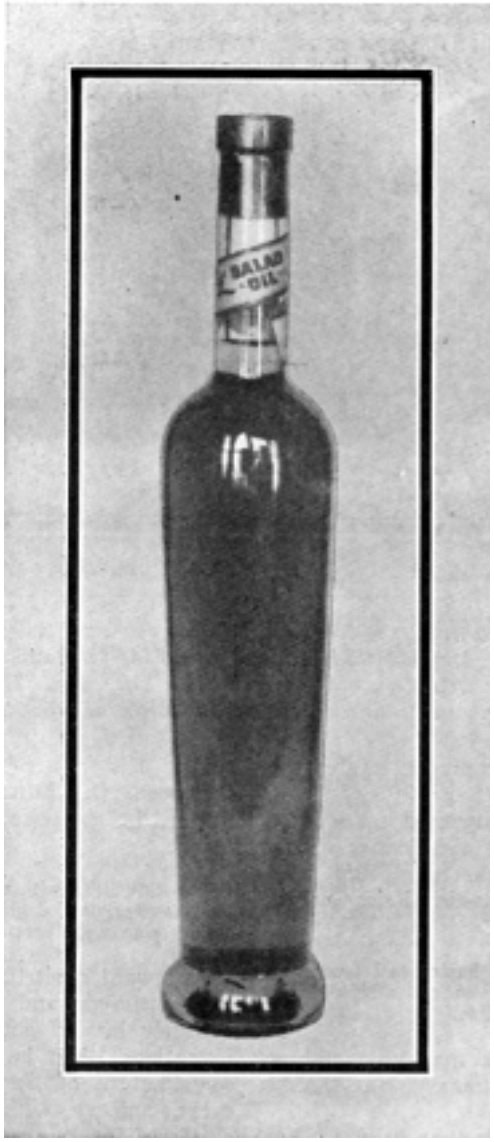
On the journey from New York he had made the acquaintance of the widow of General Nathanael Greene of Revolutionary fame, who had a plantation not far from Savannah. And now, in financial distress, Eli went to see the widow Greene.

If this story were fiction instead of truth, Eli would most certainly have married the widow, who had a great deal of money. As it was, she invited him to stay on the plantation until some employment offered itself.

Tench Coxe, up in Philadelphia, had been writing articles about the possibilities in cotton as a farm crop, and the widow Greene was experimenting with it. Whitney watched the operations with curiosity, and marveled at the slow procedures. It took a slave a whole day to separate one pound of the staple from its seed.

"I believe I can make a machine that will take out that seed," he declared to the widow. And she answered:

"If you can, you will make cotton one of the greatest crops in this country."



ONE OF THE BEST KNOWN uses for cotton-seed oil. Probably 20,000,000 gallons are used every year as salad oil and for culinary purposes

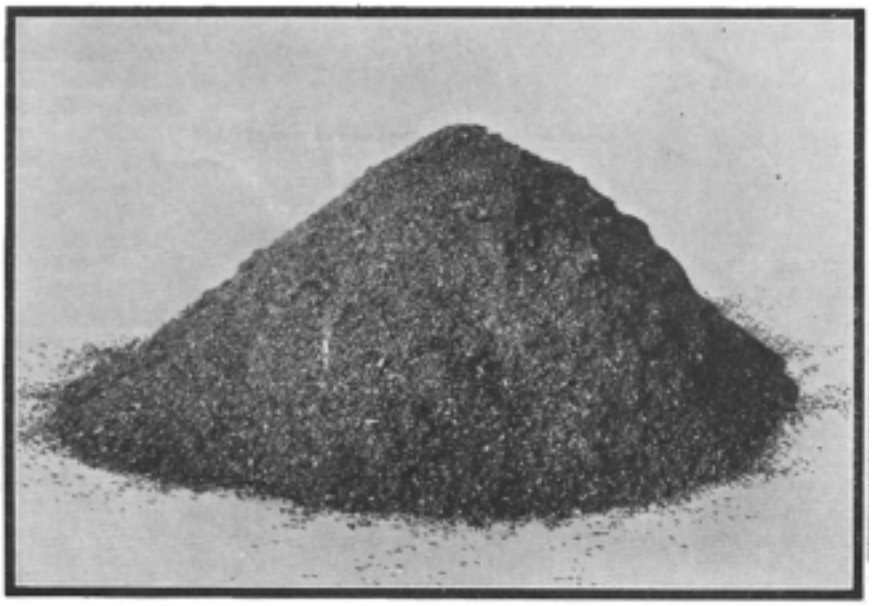
She gave him the use of a shanty on the plantation for a shop, and supplied the equipment. All day and for many hours every night he labored, always in the strictest secrecy; and then, in 1793, he produced the "saw" cotton-gin. At first it was sneered at by many people, but it did the trick.

Perhaps the reason the widow Greene did not marry Whitney was because she loved a gentleman named Phineas Miller, whom she did marry. He doesn't appear to have been jealous of Eli, for, in the business vernacular of that period, he associated himself with the inventor as "joint adventurer" for the promotion and manufacture of the cotton-gin.

Along about this time, according to a popular version down in Georgia, somebody broke into the shanty and stole the Whitney model. From it another machine was made, and the result was bitter litigation that lasted for years. The original Whitney patent was signed by George Washington.

Meanwhile Whitney repaired to New Haven, Connecticut, where he considered the facilities better for building his gins. And he certainly had business adventures.

The biggest snag he struck was when the cotton mills of England refused to buy any cotton that had gone through his gins,



ABOUT $4,000,000 WORTH of cotton-seed hulls are now saved that formerly went to waste every year. Large quantities are used in making fiber-board, which goes into trunks, sample-cases, washers, and even gear-wheels and valves. The hull bran is used for paper stock and fertilizer. It is rich in phosphorus, nitrogen, and potassium

the claim being that his process injured the fiber.

Phineas Miller, having used up a large part of his own and the former widow Greene's money in the adventure with Whitney, was now in despair. From Georgia he wrote to Whitney:

> In the name of heaven, hasten to London and disprove these calumnies on our machine. Go there as quickly as possible.

Whitney wrote back that he would go if he could raise the money. But this he was unable to do.

When things were blackest, he was taken ill in New York, and remained there three weeks. Scarcely able to drag about, he finally boarded a Long Island Sound boat for New Haven. Arriving there, he walked down the gang-plank and met an acquaintance.

"Eli," said the latter, "I'm sorry to tell you, but your shop burned to the ground last night."

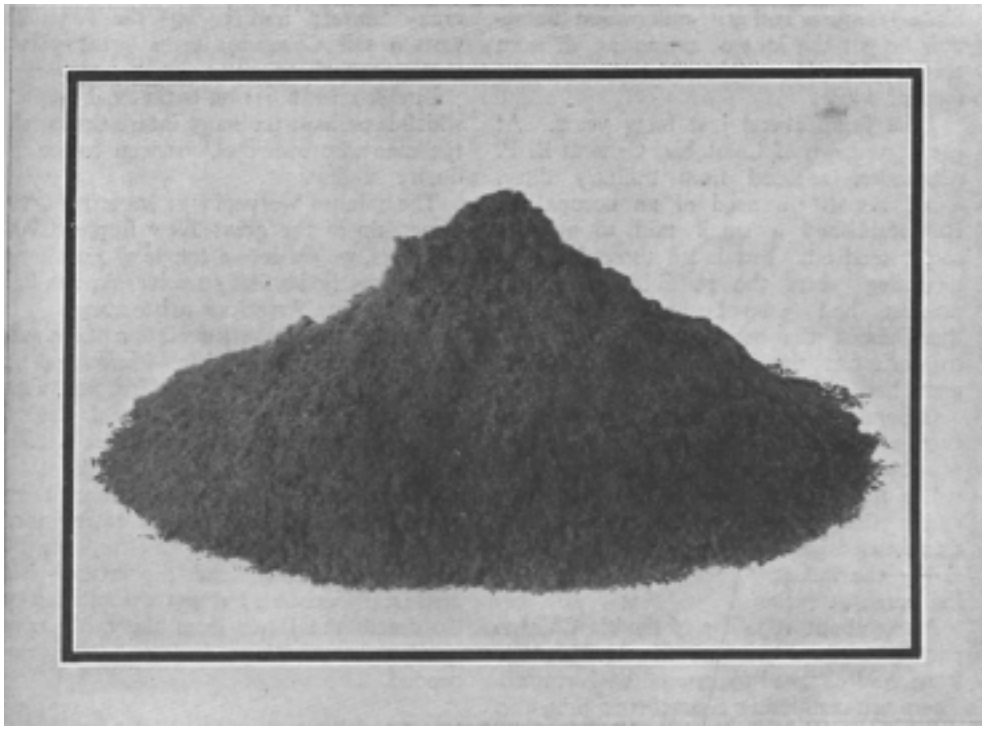
Whitney was crushed, for the time being. His faith in humanity was nearly destroyed. In a letter to his friend Robert Fulton he expressed himself in dismal terms:

> The difficulties with which I have had to contend have originated principally in the want of a disposition on the part of mankind to do justice.

Afterward capitalists took up the Whitney cotton-gin and established it, though Whitney himself got little reward for his inventions. But he found solace in the manufacture of firearms for the government, and at Whitneyville, on the outskirts of the present city of New Haven, he made a fortune.

Meanwhile, Samuel Slater prospered immensely and laid the foundation for the many cotton fortunes in New England today. In 1882 a nephew, John Fox Slater, gave a million dollars for the uplifting of the negro in the South — the land that made the cotton fortunes possible in the North.

This would lead us, naturally, to the third



AFTER THE RAW cotton-seed has gone through the delinter and huller, the kernels are crushed and pressed. The mass that remains is ground into meal and is used for stock-feed and for fertilizer. More than $40,000,000 worth of meal and "cake" are now consumed in the United States every year

chapter in the cotton romance — the chapter of the planter. It is a classic, but must be omitted here. In a word, it is largely the story of the negro, whom somebody has called the most wonderful of God's animals.

Cotton and the Negro

The negro can live in poverty or riches with equal contentment; he will consume vast quantities of food if he can get it, but if he can not he will sing and be happy on an empty stomach; he will laugh and be merry in rags, or he will swell about in gorgeous raiment; he will curl up on the floor of a tumble-down shanty and sleep as peacefully as he would in a palace.

Cotton, perhaps the greatest of our agricultural products, is still, to a considerable extent, in the hands of the negro, who rents, or sometimes owns, his little cotton patch, or works for the larger planter. He commonly eats his bread before he earns it, and finds himself in debt when his crop is harvested and sold; he frequently decamps in the night and leaves this debt unsatisfied.

He rides away on his shanty when the floods come, and settles wherever the shanty finds land again.

He plays a prodigious part in a wonderful economic development, but gets nothing out of it.

To-day the Southern States practically have a monopoly of the world's raw supply of cotton. Of a total world production of some twenty million bales, we grow, normally, three fourths. Our annual crop in weight would outbalance fifty million persons.

But proceed to still another chapter, truly marvelous, though in a different way. It is the story of the by-products of cotton — which to-day aggregate more than a hundred million dollars a year.

The Discovery of Cotton-Seed Oil

Go back to 1826. At Columbia, South Carolina, lived one Dr. Benjamin Waring,

State Treasurer and grist-mill owner. Somehow he got the idea of extracting oil from cotton-seed. He did it, but not in a commercial way.

Then jump ahead just forty years. At the same town of Columbia, General E. P. Alexander, released from military duty, found himself in need of an occupation. He established a small mill to produce cotton-seed oil. But in all those forty intervening years the possibilities in this product had gone begging. Here and there about the country, men had tried to work out the idea, and, for the most part, had given it up.

General Alexander's undertaking, however, marked an awakening, for the South was hungry for employment of any kind. Little mills sprang up in the cotton belt, and a fair grade of edible oil was produced, used chiefly for packing fish. Very slowly the industry grew, without attracting much attention.

Along about 1890 one of the big Chicago packers made a pleasure trip to New Orleans, and chanced to stop off at Memphis. There are conflicting claims as to who this packer was — Armour or Swift or perhaps still another. But somebody in Memphis took him out to see a cotton-seed oil mill in operation there.

He tasted the oil and indulged in reflections. Here was something new — and he had cash! So he sent samples home to his chemists. "See what you can do with this," he told them.

In time, the result was hogless lard, butterless butter, oliveless olive oil, and such things — all wholesome products that cut the cost of living and began a new epoch in food productions.

But only a beginning had been made. Capitalists fell over one another to get into the cotton-seed game. The planters were no longer permitted to go on wasting their millions of dollars. Among the by-products evolved in quick succession were stock-feed, fertilizer, soap, fiber for high-grade paper, miners' oil, nitroglycerin, and gun-cotton.

Previous to this the manufacture of fiber-board had been begun, and this is now an important by-product of cotton. Of this material are made trunks, gear-wheels, tubing, washers, key-tags, rollers for roller-skates, handles, waste-baskets, insulation, etc.

In 1887 the Southern Cotton Oil Company was formed, to take over mills in many States; and to-day the American Cotton Oil Company owns great plants throughout the South.

But we must hurry on to the final chapter, which is perhaps the most interesting of all: the men who own the American cotton industry to-day.

The minute we begin to investigate the ownership of the great New England cotton mills, we get into a tangle of genealogy, and presently we find ourselves face to face with the true American aristocracy.

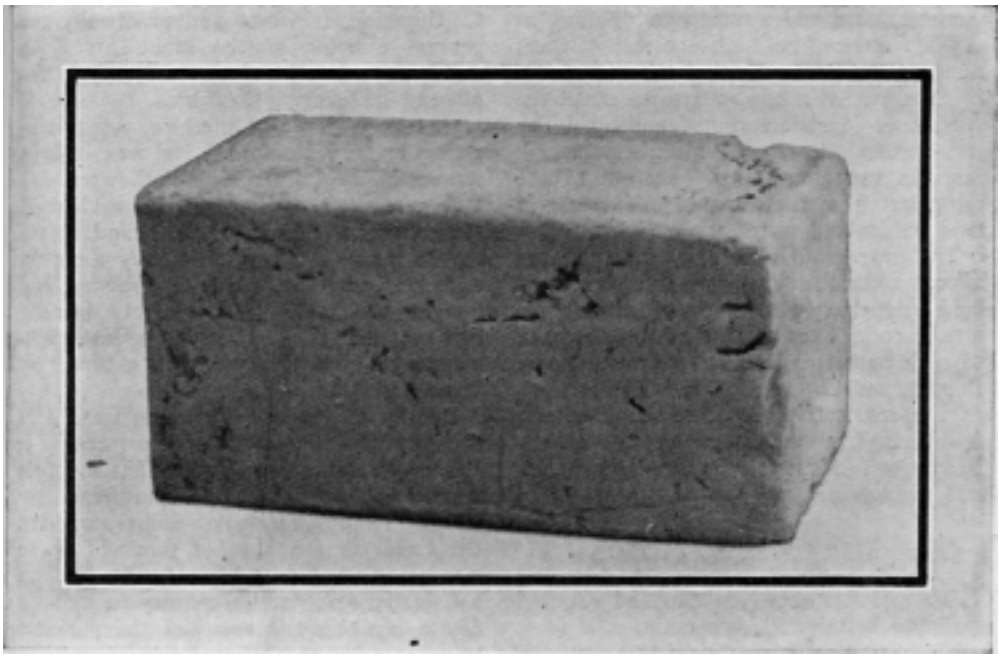
At the time of the Revolution there were hundreds of families in Massachusetts, Rhode Island, New Hampshire, and adjacent colonies who traced lineal descent from the Puritans. Many of these families still bore Puritan names. Proud families they were — but poor, most of them, notwithstanding the fact that among them were men distinguished in the law, literature, legislation, and diplomacy. The aristocracy existed, but not the plutocracy. To create the latter from the aristocracy, some great wealth-producing industry was needed.

The Big Pioneers in Cotton Manufacture

We have viewed the struggles of the men who made the beginning. About the time of the War of 1812, things began to move fast. In Boston lived Francis Cabot Lowell, merchant, who was descended from the original American member of the family, Percival Lowell, dating back close to the days of the *Mayflower*. Francis Lowell was a sort of second Tench Coxe, for he saw the necessity for cotton cloth in America. Power looms were in use in England, but they could not be had over here; so Lowell set to work to produce machinery himself. Slater had accomplished the spinning by power; Lowell was practically the father of the power loom in America.

In company with other Boston men, he established in 1813 a mill at Waltham, Massachusetts; and here, for the first time, all the various steps in the making of cotton goods were accomplished under one roof. This concern was called the Boston Manufacturing Company. It is running to-day. In a hundred years the Lowell family has broadened by marriage into many ramifications; but if you look closely into the ownership of the great mills, you will find that the Lowell blood has large holdings.

In Boston about 1814 also lived Nathan Appleton, merchant and auctioneer and descendant of an early American settler. When the Waltham mill was first started it had difficulty in selling its product, and Nathan Appleton undertook to dispose of the goods at auction. He succeeded so well that he became interested financially in the mill. To-day the Appleton family is prominent in Boston, and if you look through the list of directors and stockholders in the great cotton mills you will find this same name well represented.



IN 1870 THE FRENCH government ordered a chemist to invent a cheap substitute for butter for the army. This was the real beginning of butterine made from "butter oil," a very high quality of cotton-seed oil

The Cotton Plutocracy of New England

Up on the Merrimac River, in 1813, one Captain Phineas Whiting built a little cotton mill, using water-power. About 1820 he made a journey to Boston and called on Patrick J. Jackson, a contractor and all-around man of affairs. Said he:

"Come up with me and see the possibilities for water-power cotton mills."

Jackson went. He said very little afterward about what he saw, but he immediately bought up all the farms bordering on the water-power.

This was the nucleus of the Merrimac Manufacturing Company, organized soon afterward by Jackson, Lowell, Appleton, and other men who had made money out of the Boston Manufacturing Company at Waltham. Large mills were established here on the river, and a city was founded, afterward called Lowell in honor of Francis C. Lowell.

About the time of the establishment of the town of Lowell, there was in Boston a firm of importing merchants called A. & A. Lawrence. The Lawrence brothers came from a prominent colonial family, and, in addition to ancestry, possessed merchandising genius. Incidentally one of these brothers, Abbott Lawrence, was Minister to England and a member of Congress.

The Lawrence firm invested money in the Lowell mills, and afterward in a new cotton-mill enterprise located farther down the Merrimac River. A city grew up there, and its name is Lawrence. Thus you get in a nutshell the genesis of the great rôle played to-day by the Lawrence family in the New England cotton industry. One phase of the Lawrence activities is represented by the firm of Lawrence & Company,

selling agents for many of the larger mills. This firm is said to do a business of $50,000,000 a year.

At Lawrence, now a city of nearly 100,000 people, are located some of the largest cotton factories in the world — in part the properties of the Pacific Mills.

Twenty-five miles north of Lowell are the Amoskeag Falls in New Hampshire, also forming a part of the Merrimac River. Previous to 1831 small cotton mills had been established there, on some of which Samuel Slater had a mortgage. Failing to get his money, he took the mills; then, financed by Boston capitalists, these mills became part of a new enterprise called the Amoskeag Manufacturing Company. The site became the city of Manchester. Big fortunes were made, not only out of the mills, but from the tremendous increase in land values and water-power rights.

The ownership of these mills to-day affords a curious study into this New England aristocracy-plutocracy of cotton; the men in control can trace their descent back to such names as Thomas Jefferson, Roger Conant, and Cotton Mather. The present-day representatives of these families, and of others like them, are typical of the Boston and northern New England cotton-mill ownership.

Cotton-Mill Ownership in the South

Down in southern New England you find a similar cotton-mill ownership.

We have already seen how Moses Brown financed Samuel Slater at Pawtucket, and made possible power-spinning in 1790. Moses Brown himself was a colonial descendant, including among his ancestors the Rev. Chad Brown. The descendants of Moses Brown include to-day some of the very richest and most powerful of Rhode Island's cotton-mill industry. The Goddard and Gammell families of Providence are in this list; they still own the ancient firm of Brown & Ives, the inception of which dates back a hundred and eighty years — long before any cotton goods were manufactured in America. The firm was originally engaged in importation.

Here among the Providence mill-owners, too, you find the Lippitts, represented most conspicuously to-day by United States Senator Henry F. Lippitt, and by Charles Warren Lippitt, himself ex-governor and the son of an ex-governor.

At New Bedford lives the Crapo family, mill-owners. William Wallace Crapo is also a governor's son, his father having been chief executive of Michigan. But here we get away from colonialism.

And perhaps it may be reassuring to discover that in the very midst of this strongly intrenched plutocracy of cotton you find men who have come up without inherited financial backing. Possibly many of these men may be colonial descendants.

For a notable example, take Frederic C. Dumaine, treasurer and practically the general director of the great Amoskeag mills. As a boy he tended the door in the office of T. Jefferson Coolidge.

Or take Walter H. Langshaw, now a mill-owner in New Bedford. He was once a weaver in the Pacific Mills at Lawrence.

A generation ago a man named Robert Knight was a clerk in Rhode Island. Having no money with which to buy a cotton mill, he leased one, earned the money, and bought the mill. The Knights became perhaps the greatest of individual mill-owners in New England, and a power in Rhode Island.

But by far the most striking feature of the New England cotton-mill ownership is this ancestral line of descent that involves aristocracy in name and plutocracy in power. In these ranks you find represented the lineal descendants of most of those men and women who came during the first half of the seventeenth century to found a future republic. If you had the patience to trace back the lines of genealogy, you would find that they lead from the present directors' rooms in the mills even to the humble homes of the Pilgrims at Plymouth in 1620. There are many prominent families that might be named.

They are Harvard men — these cotton-mill owners of to-day; their fathers were Harvard men; and their grandfathers. In many instances, there has been no break in the Harvard family history for many generations. Or, if they are not Harvard men, they are Brown University men or Yale men. Brown University at Providence, by the way, was made possible, if not actually founded, by Moses Brown and other members of the Brown family of cotton men.

So, by right of name, culture, and money, this great group of New England men, and women too, stands for an aristocracy-plutocracy such as exists nowhere else in America.

Yet it is significant that very slowly, almost imperceptibly, the power of this group is gradually ebbing away — as the part played by the South in cotton manufacturing increases. About half of our American cotton goods is now made in the Carolinas and adjacent States. New England capital still controls a good deal of this; but there are men who predict the day when the South will make most of our cotton goods — the day when the descendants of the present cotton aristocracy-plutocracy in New England will no longer control the mills.

The war in Europe has stopped, for the time being, the progress of cotton; but, at the same time, a new impetus has been given to a movement toward an immensely bigger manufacture of cotton goods in America, the ultimate effect of which we scarcely now realize. No industry as big and as vital to America can be permanently checked.