

BIG COTTON PRODUCTION

Uses to Which This Southern Staple is Put by Science.

U.S. GREATEST PRODUCER

Egypt and India Are Growing Cotton, But They Do Not Count For Much in the Market—White Men Are Forced to Do Very Much of the Tilling.

There is a world of interest in the culture of cotton. It does not end here, for there is something absorbingly interesting about every part of its transformation, from raw staple to the many attractive forms it takes before it reaches the markets.

The bulk of the cotton crop is grown in the South of the United States. Egypt is producing largely, and India is trying to compete, but the Southern states control the market.

The large majority of the 9,000,000 negroes in the United States owe their livelihood directly to this crop. They cultivate the cotton that clothes the world.

Of course, they do not do all the work, for the white man has been forced to do much of the tilling himself, as the negroes have grown so shiftless and "no-account."

The ground is broken thoroughly, then laid off in long rows of furrows. The rows are from 18 inches to 4 feet apart depending on the fertility of the soil.

Contrary to the usual rule, the rows must be farther apart the richer the soil. This is because the cotton plant must have room to spread. The distance between the plants in the same row is regulated by the same rule, which is directly contrary to that used in growing most other crops.

The deep furrows first laid off are to receive the fertilizer that is to stimulate the crop to a rapid growth, early maturity and a consequent early bursting of the bolls, so that the harvest may be over before frost, as frost ruins the green bolls.

Fertilizer is used both as a stimulant and for food. Most of the Southern fields would not produce a profitable crop of cotton if not liberally supplied with guano or manure.

Indeed there are years when thousands of farmers do not make enough out of their cotton to pay for the fertilizer.

In the far South the cotton begins to blossom early in June and by July 1 the fields are covered with blossoms. The third day the blossoms change slowly to a purple red and then begin to wilt, soon dropping off, leaving a tiny green bud that is to grow into a boll.

The cotton bolls swell rapidly and show the lines where the boll will be divided into sections when it opens and opens. Cotton begins to open in August. The green bolls are full of tightly-wadded cotton and cotton seed.

This cotton bursts the bolls which then spread wide open as the warming sun causes the cotton staple to expand further. After a few days the locks of cotton are hanging loose in the fields, with sacks strapped over their shoulders, and pick the cotton boll by boll.

MUST NOT LEAVE THE COUNTRY

An Old, Unwritten Law and With Few Exceptions Observed.

The president must not leave the United States even for a day. This is an old, unwritten law which has been respected by all successors of George Washington, with perhaps one or two exceptions. This restriction is not imposed by statute.

President McKinley emphasized his respect for this rule on his tour to the south and west. It was unofficially announced that he would meet President Diaz, of Mexico, somewhere near the boundary of that sister republic.

A controversy as to whether Mr. McKinley might properly cross the Mexican line, even for a few hours, arose. Early in May, when he visited El Paso, Texas, where he was greeted by President Diaz's personal representative, he expressed a desire to take a look into Mexico.

From El Paso there extends into Mexico the International Bridge spanning the Rio Grande. Whether the president would dare to cross this structure or not was the question which members of his party asked one another. He did not. He went to the bridge and caught a view of the Sierra Madre.

Half-way across the bridge was a line. Stepping over this was putting foot upon Mexican territory. President Harrison had ventured as far as this line ten years before. But President McKinley did not do so much as place his foot upon the bridge.

President Arthur was accused of violating this unwritten law in October, 1883, upon a pleasure trip to Alexandria Bay, Thousand Islands. His political enemies accused him then of venturing across the Canadian line on a fishing excursion.

The boundary between Canada and New York extends to the middle of the St. Lawrence river. President Cleveland was similarly accused. On one of his hunting trips to North Carolina he sailed by the ocean route past Cape Hatteras.

His enemies contended that he ventured outside the three-mile limit. According to international law, a country's possessions extend for three miles outside its coast line.

Plying the seas farther than this is leaving home territory. The president must not accept gifts of great value from inferiors in the federal service, but he may accept gifts from foreigners.

Grant, McKinley, and Mr. Roosevelt have received gifts from foreign rulers. Several gifts have been sent to Mr. Roosevelt from the West.—Kansas City Star.

The Czar in Proverb. In a recent number of the Paris Figaro were found collated some characteristic Russian proverbs that regard the czar and his position and find much current application.

"When the czar splits into a dish, it breaks into pieces for very pride." "The crown does not protect the czar from headache."

"Even the lungs of the czar cannot blow out the sun." "The czar's back, too, would bleed if it were washed with the knot."

"The czar even covered with bolts is declared to be in good health." "When the czar rides behind a hired horse every step is charged as a league."

"The czar may be a cousin of God, but his brother he is not." "The czar's arm is long, but it can not reach to heaven."

"Neither can the czar's vinegar make anything sweet." "The hand of the czar, too, has only five fingers."

HOW BATTLESHIPS COAL

Compensating Sea-Cone System in Vogue on Cruisers.

IDEA OF A LANDSMAN.

Progress in the Difficult Naval Problem of Feeding the Bunkers of a Moving Fleet—Spencer Miller's Invention of a Marine Cableway.

In the art of warfare on the high seas in its present highly developed state there are a thousand and one vital factors that go with the imposing battleships, the gigantic guns and the armor-piercing projectiles; but of all these none is more important than the matter of coaling the ships.

and the truth of this statement is readily shown, since it has been proved in every naval engagement since the time fighting craft were first fitted out with apparatus for steam propulsion and the dire need of obtaining a supply of coal during a crisis was rendered painfully obvious during the Spanish-American war, when Admiral (then Commodore) Schley sent to Admiral Sampson the following telegram: "Coaling off Cienfuegos is very uncertain. Having ascertained that the Spanish fleet is not here I will move eastward tomorrow, communicating with you at Nicholas Mole. On account of short coal supply in ships cannot blockade them if in Santiago. I shall proceed tomorrow, 25th, for Santiago, being embarrassed by Texas's short coal supply and our inability to coal in the open sea. I shall not be able to remain off that port on account of general short coal supply of squadron, so will proceed to vicinity of Nicholas Mole, where the water is smooth and I can coal the Texas and other ships with what coal may remain in collier."

Many have been the schemes evolved for a safe and practical method for coaling at sea, but the history of these interesting attempts seems to date back only to 1883, when Lieutenant R. S. Lowry, R. N., proposed that a number of coal boxes should be built, each having a capacity of one ton. These boxes were to have airtight compartments so that they could not sink, and were to be passed from a collier to the ships by means of a line, when they were to be hoisted to the deck, emptied and returned. This device was never tried, probably for the reason that it was deemed impracticable, its operation being too slow and complex to meet the requirements of fleets when in active service and it would hardly be needed at any other time.

A marine cableway, however, presents obvious difficulties, for instead of fixed points by which the rope may be kept taut there are the constantly moving boats, the masts of which accentuate the rise and fall and various rolling motions. Lieutenant Bell of the British navy was the first to propose the transmission rope method, which he did in 1888, when he suggested that the stern mast of the warship and foremost of the collier be connected by a suspended cable, just as though they were immovably fixed on land.

Several other cable methods followed, but it was not until 1893 that an actual experiment was attempted to pass coal between two vessels while at sea; this was done with an apparatus designed by Philip B. Low, who improved upon Bell's idea, one end of the cable being attached to the deck of the warship Kearsarge and the other passing over a tackle block on the San Francisco where it was fastened to a massive iron weight.

By this arrangement the motion of the vessels was counteracted to a considerable extent. When it was desired to transfer a bag of coal it was hoisted to the masthead, where it was attached to the cable, when it readily traversed the length of the latter by gravity, the rope being somewhat inclined.

But at least a beginning had been made, and in March, 1898, just prior to our war with Spain, Mr. J. J. Woodward, a naval constructor of the United States navy, with a prophetic insight, submitted a plan to Secretary Long, which he recommended, and that had been drawn up for him by Mr. Spencer Miller, engineer of the Lidgerwood Manufacturing company of New York, for an installation to be placed on board a collier and by which the vessel could coal any of the warships of our navy in the open sea.

Negotiations between the various parties interested were long continued, and not until Admiral Schley had sent his famous telegram was the work of construction really commenced; but by this time the history of the Spanish-American war had been made and written; the lessons it had taught were vividly impressed upon not only our naval authorities, but those abroad as well, for experiments were immediately begun in France, England and Japan. When the Spanish fleet did emerge from the Bay of Santiago there were only eleven of our ships on blockade duty, while three other vessels, representing an outlay of nearly \$10,000,000, were at Guantanamo, forty-five miles away, coaling ship.

The full-sized apparatus was completed a little later, and the government designated the collier Marcellus as the vessel to be equipped for the practical demonstration, but before this was done the equipment was set up on land, where it was inspected by many higher officials of the navy, among them being the late Admiral Sampson, Commander Rodgers and Naval Constructor Bowles.

TO BOOM PERSIAN TRADE.

Intent of Gen. Morteza Khan, Envoy Extraordinary.

General Morteza Khan, envoy extraordinary and minister plenipotentiary from Persia to the United States. The new minister succeeds General Isaac Khan, who was promoted to the Belgian embassy.

Khan, who is wealthy and lives in Teheran, is enthusiastic on the subject of increasing the trade between this country and Persia. He declares that there are articles manufactured in this country which could find a ready market in Persia, and at the same time Persia exports many things which would be welcome in the United States.

He was met by the chief secretary of the embassy, Newton Khan, Haret Miriketlam, Persian consul at New York; H. Kolekian, V. Z. M. Bayajian, and Herant Kiretchian. Through an interpreter the general said: "The feeling in Persia for the United States is good, and we look on her as a great and powerful nation with whom we desire an increase of trade. In Persia it is felt that the friendship of this country for our own is sincere and that she, unlike some other countries, does not cast covetous eyes on our land. We want to see opened up between the two countries a great trade. Every year we send to this country several million dollars' worth of rugs and carpets, but outside of this there is but little export. Persia is a great and growing country. Our export trade is growing, and at the same time the demand for imported goods is on the increase."

"Most of our demands are supplied by Russia and England. Now, with our growth there is a greater demand, and for goods which this country could supply. So we desire to see better trade relations between the two countries. The wares, art works, and fabrics are practically unknown in this country. It is the desire of Gen. Morteza Khan, through the Persian consuls, to make known the different articles which Persia can supply, and so create demands and divert some of the trade which has been going to other countries. At the same time we want Persia to know more of American goods and gain an appreciation of their merit and worth."

The new minister is a bachelor and comes of a noble line. His father, the late Hadji Mirza Dejarad Khan, was the first to introduce European ideas into the empire. He was also the owner of the first newspaper published there. Gen. Morteza has been for years in the Persian diplomatic service.

The Mexican Navy.

In these strenuous days, when the American navy is advancing by leaps and bounds towards the head of the list of the navies of the world, it is interesting to note the progress that is being made along naval lines by the sister republic of Mexico. James A. Le Roy, the United States consul at Durango, in a recent report to this government, says:

Recently two modern gunboats were added to the fleet which for the present serves Mexico as a navy. These gunboats were built in the United States, at Elizabethtown, N. J., and two similar gunboats are now in process of construction at Genoa, Italy. Mexico has so far not acquired men-of-war, though she has in recent years devoted some attention to fortifying her coasts. Her fleet of gunboats is designed, however, principally for purposes of patrol along her coasts, and to carry small bodies of troops quickly to those regions in the northwest province of Sonora and in the southernmost territories of the republic, where uncivilized tribes still, from time to time, create disturbances.

According to an article recently printed in the Mexican Herald of Mexico City the Mexican navy at present consists of four small boats in the Gulf of Mexico and two in the Pacific, besides small patrol boats in southern waters. The Democrat, the first boat bought by Mexico, of 450 tons displacement, is on the Pacific coast, and with her is the Oaxaca, an old sloop-rigged boat of steel about 1,000 tons, but of only seven knots speed, used as a transport. The two new gunboats bought in the United States, named the Vera Cruz and the Tampico, are in the Gulf; they have steel hulls, are 200 feet long, displace 1,000 tons, have shown a speed of about fifteen knots, and have two four-inch and other smaller rapid-fire guns each.

The Zaragosa and Yucatan, 1,226 and 650 tons, respectively, the former having six 4.8-inch Canet guns, are also in the Gulf, and are used as training ships for the naval school, which was established at Vera Cruz in 1879. The Bravo and Morelos, being built in Italy, will displace each 1,200 tons. There are sixty-five cadets at Vera Cruz, also an arsenal and small floating dry-dock. There is a small wooden dock at Guaymas on the Gulf of California.—Washington Star.

Chinese on American Education.

This is the opinion of a highly educated Chinese official held of our educational standards: "The schoolhouse and college in America, where the rising generation ought to be taught and trained in human conduct and manners, have now become mere Smithsonian workshops, where the pupils are taught to make money, or, as it is called, how to get on, by learning the coarse jugglery of the hand called 'modern mechanical arts,' or the fine jugglery of the head, called 'law and theology.' In many American universities dentistry and chiropody, or the science of toenail peeling, are put on the same level with Plato and Virgil."—Prof. J. W. Jenks.

FINLAND'S LONG STRUGGLE

Characteristics of the People Russia Seeks to Subjugate.

THEIR LOVE OF LIBERTY

Marked Differences Between Their Home Surroundings and Those of the Russians—Has Been an Object of Contention to Russia and Sweden Since Twelfth Century.

It is not only as one of the "little peoples" and little countries appropriated by Russia, but because of its peculiar political condition, that Finland has, of late, commanded especial interest. Always a covetable morsel, it has given its ursine devourer intense uneasiness. Its fate still hangs in the balance, with the great interrogation ever present to the watching world, "Is it or is it not to be permanently absorbed by Russia?" Finland, however, will never be satisfied until the rights of self-government are truly and not nominally restored.

When the Russian was foisted upon them by their adoptive parent-country, as the official language, the Finns positively refused it for general conversation. The government has now given up trying to compel its use, so that it is only taught in the universities. Finnish is distinct from all other languages, though it is thought to have been used throughout the whole of Russia and northern Scandinavia. It is said to be the most melodious survival of the Tower of Babel. With sixteen inflections, made by as many endings to the same root, it is much more difficult to learn than the Russian.

Broadly considered, it is the speech of a nation of about three millions of people, not so many as the dwellers in Greater New York. Their land has an area as large as the United Kingdom, with Holland and Belgium attached. It is very accessible, readily reached from St. Petersburg, Stockholm, or Newcastle.

Traveling is cheap; railroads are good, and cars are comfortable; steamers are many, yet "Suomi," or the "Land of a Thousand Lakes," or the "orchard of ten thousand," is, as yet, little known.

One reason why the Grand Duchy is so little known is on account of the peculiarities of the climate. It varies greatly in different parts of the country. In the south, where the longest night is eighteen and a half hours, the winter lasts seven months. In the north there is total darkness for two months. But to the Finn winter is the season of seasons, the Gulf Stream somewhat tempering the cold. The short summers, however, with the midnight sun to be seen in the Arctic portion for two months, are delightful for travelers. The changes in temperature, it is true, are somewhat startling. Sometimes the thermometer from intense heat falls below the freezing point in August on the bog lands. The results to crops—especially to barley—are disastrous, and Finland is a vantage of famine. In one dreadful year 100,000 of the inhabitants died from starvation.

The Finns are by nature an agricultural people. Having been for such a length of time nomads the raising of little crops, during halts, brought out their innate love for farming, and finally overcame the tendency to wander. Thus they have followed the laws of history, the predominating class now being the boner or peasant owners of small farms. These they may have taken from larger farms, in colonization, or may have been able to secure separately, in smaller plots between rivers.

Then there are the torpares, or peasant tenants, who rent small sections of land called torps, which are parts of larger estates. Their rents are moderate, sometimes only a few days' work sometimes a certain fixed proportion of a crop of grain. After these come the cottagers, owning little garden patches, with, perhaps, pasture for a cow or two, and then the inhysingar, or lodgers, who seem to be a species of traveling laborer, somewhat like the lumbermen, who are often found in our Northwest.

Leaving out the Russian oppressions, which at one time almost amounted to a scheme for serfdom, the general attitude of dominant sovereignty to Finland, has been freedom for internal development. Great thought and effort have been spent towards economic progress.

There too, is a strong democratic tendency; nobles are selling hereditary estates to peasant farmers, who can make more of them than they, and more cheaply. These middle class people, as in America, often rise to prominent positions by force of character, educate their children at the universities, and aid the leveling process, which is fatal to feudal traditions.

Any one now may own land of any kind, and the nobles have no longer the right to possess estates without taxation. Many of the most aristocratic families, have, so to speak, "gone into trade," establishing land companies and timber industries wood pulp and wood paper mills.

By these similarities in social conditions, many of the Finns who have been taking refuge with us, are already imbued with the American spirit. They make good citizens for us, but let us be generous enough to hope that the political state of their own country, "poor, little Finland," as they have called her, will soon be such as to enable them to live there in happiness, and develop on lines similar to our own.—Maria Elmen-dorf Lillie.

JAPANESE FINE ARMY SURGERY.

Effective Discipline Better Maintained When Surgeon Is An Officer.

Major Seaman said that the Surgeon General of the army should be at least a major general. Without rank and prestige he said the medical officers of the army would be unable to enforce the respect and discipline necessary for effective service. A lack of such rank and prestige was the curse of the British medical service, which, in his opinion, is as far behind the Japanese as is the American.

Major Seaman relates his observations of the medical service of the Japanese army during the Manchurian campaign. He said:—

"We are not to be compared with the Japanese in medical and sanitary organization. They have a medical director of their army who ranks as a lieutenant general. They have six officers who rank as major generals. They have one who ranks as a brigadier general with every 20,000 men in the line, and they have the power to enforce their orders. I was at Hiroshima last summer when 9,800 men were brought from the front. Of that number only 34 died. The vast majority of them got well and were returned to the front.

There were 1,105 brought to Tokio—a great many stretcher cases—and of that number not a single man died, although they were shot in almost every possible way. Six of them had bullets through the brain in different directions. Nine had bullets through their chests. Six had bullets through their abdomens, the point of exit and entrance being discernible in all cases. And they all got well. That was because they were fed on a ration that is a rational ration, and they did not have their systems loaded with uric acid and other elements that excite inflammation after injury and cause death.

"It is much too early to submit statistical proof, but from careful observation I venture to predict the records of the Japanese hospitals will show a large reduction in the percentage of mortality from casualties, especially in penetrating wounds of the skull, chest and abdomen, and injuries to osseous structures; indeed, of every variety of wounds except perhaps those of the spinal cord, when compared with the statistics of former wars.—New York Herald.

Origin of the Deadly Yellow Peril.

The discovery of yellow fever, according to a student of the disease in this city, dates back to the first years of the discovery of America, when the disease broke out among the sailors of Columbus in San Domingo. But the first authentic account is of an epidemic which occurred in the Barbados in 1647. Since then innumerable epidemics have ravaged the cities of North and South America, Central America, and even Europe.

During the Napoleonic wars the most extensive epidemics occurred. In 1800 Cadix was visited by this scourge, which attacked 48,000 out of 57,000, 8,000 dying in a few months. One of the worst epidemics which has ever ravaged the United States occurred in 1853 and extended along the Atlantic coast, through all the Southern states and as far north as Rhode Island. One hundred and twenty-five thousand persons were stricken, more than 20,000 dying of the disease.

A peculiarity of the germ of yellow fever is that it may be carried long distances and preserve its vitality for months. During the epidemic of 1800 in Cadix there was an instance of this. A native fleeing from the infected city went to his villa in Medina, Sionia, and there died of the disease on his arrival. The house was immediately closed and the following year the articles of clothing and furniture were sold to a dealer in junk. He died of yellow fever in a few days and the epidemic which followed was directly traced to this case.

The infected trunk of a man who had died in the Barbados of the disease was the beginning of the outbreak in Philadelphia in 1741.

The effects of this man, a Mr. Bingham, were sent out from the place where he died and the germs had enough vitality in them when the trunk was unpacked to lead to a disastrous outbreak. Individuals of all ages and races are attacked. It was at one time thought that the creole was immune, but this is found to be a mistake. The negro is not as susceptible as the white man, but he is by no means exempt. One attack, as a rule, seems to render the victim immune for life, though the immunity may be lost by a prolonged stay in a northern climate. Yellow fever is a hot-weather disease, being most prevalent in June, July and August. One or two frosts may arrest an epidemic, though it may reappear on the return of warm weather.

A workman on the Siberian railway was accidentally locked in a refrigerator car and was afterward found dead. Imagining that he was being slowly frozen to death, he had recoiled his sufferings with a piece of chalk on the floor. The temperature in the car had not fallen below 50 degrees Fahrenheit throughout the journey.

There is an establishment in Brussels where grave-digging is taught, and it has been decided that all sextons in Belgium must be graduates of this academy.

Banana skins are in demand in England, particularly at hotels, for the cleaning of boots.

A man who is satisfied with his job never reaches the top of the ladder.