



A TREATISE ON PERENNIAL COTTON.

(*Gossypium Arboreum*)

ITS COMMERCIAL VALUE AS COMPARED WITH HERBACEOUS COTTON—THE FEASIBILITY OF ITS CULTURE IN NORTHERN LATITUDES, ETC.

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In the following pages I propose to discuss fairly, and as fully as the allotted space will permit, a subject now beginning to excite interest and inquiry throughout our entire country—viz: The production of a good mercantile cotton in large portions of the United States were its cultivation has hitherto been regarded as impracticable. In my belief the matter is no longer a question, but a certainty—and one which, without doubt, will become apparent to the public mind as soon as certain measures, now under consideration, shall have been carried into effect.

There is, in the whole vegetable kingdom, probably no other member of the plant family so widely disseminated as the cotton. There is no one of the great divisions of the globe that does not produce cotton. No very extended territory in two of those great divisions to which cotton, either as tree, shrub, or herbaceous plant, is not indigenous. In Europe and America, the cotton limits are more circumscribed than in Asia and Africa, not that the field in which it will grow is narrower in extent, but that nature, in her fostering care for man, found no necessity for wider distribution of the material when she first planted her world-garden. But once let the necessity arise, and she most kindly steps in to second human efforts, and supply the cotton wants of man in Illinois as well as India; in New England as in New Grenada. It is unreasonable to expect nature to plant and perfect every thing we require, without an effort on our part to assist her. She has most generously given us cotton in as varied form as she has ten thousands of our other requirements, justly expecting us to select and experiment upon and improve her gifts for our own benefit.

In Borneo, and a few other islands of the Indian Ocean, she has planted the gigantic *Gossypium* growing into a massive tree, enduring for centuries, leaving it to man's ingenuity to discover its commercial value and utilize it. In the Southern States of our own country, nature, at the call of a young nation's necessity, planted the herbaceous cotton, the honor of proclaiming the advent of which is due to Colonel Wade Hampton, of South Carolina. Commercial expediency promptly put forth her fostering hand and led the stranger onward, a most to a throne, from which to dictate terms to the civilized world.

In Egypt, India, China, and thousands of far off corners of the world, nature has planted cotton, leaving it for commerce to distribute it to the world. To some extent commerce has long since answered the call; but until European looms and spindles—nay, even Europe herself, shall have been transferred to the Orient, commerce, in spite of nature's bidding, will nevertheless follow expediency; and this being the case, her glance will continue in all time to come to be steadily fixed upon the Western World as a source whence to draw the elements of her own prosperity. That in the future this glance shall become general, looking to our whole country, instead of a fraction thereof, as has heretofore been the case, is hourly becoming more and more apparent.

We shall, beyond all question, I believe, ere long supply to the spindles and looms of Europe from two-thirds of all the free territory in the Union, a cotton fully equal to any produced elsewhere, and which we can afford at rates that will effectually silence competition from beyond Capes Horn and Good Hope. But in order to accomplish this desirable end, we must avail ourselves of, and utilize a cotton, radically different in its structure and organization from the herbaceous plant so generally cultivated in the South. This material we have had within the reach of our outstretched hand, any day and always, ever since our earliest existence as a nation.

Scattered all over South America, from the frigid regions of Patagonia to the equator, and from the shores of the Pacific, to the delta of the Orinoco, there is found growing spontaneously a cotton-bearing tree, taking on various habits consequent upon conditions of soil and climate, yielding cotton perennially and enduring without replanting, from ten to sixty years. The nobler—probably the elder branch of this perennial cotton-bearing tree, been very properly christened the *Gossypium Arboreum*, known to naturalists these thousand years past, and utilized by the ancient Peruvians, centuries anterior to the conquest of their country by the Spaniards.

As some account of my first interview with his venerable cottonship may not be uninteresting in this connection, I extract the following from the report of one of my lectures, published in the *Working Farmer*, of N. Y.

"Several years ago, while an employee in the Patent Office, I received and accepted a tempting offer from a Cutilian gentleman of wealth, Senor Al-logara, to conduct certain matters on his estates. One holiday morning, not very long after my arrival at my tem-

porary South American home, I set out on horseback along the course of a modest little river, called the *Chipura*, and forming the boundary between semi-civilization, and the territory of the *Ypurian* savages. Resolved to explore as much of my patron's domain as the brief May day would allow, I pushed briskly forward over the already frozen ground, covered fetlock deep with newly fallen snow, following the windings of the stream, whose ledgy banks of dark rock, generally thrust back, as it were, by alluvial bottoms from one to three hundred yards distant, indicated that the *Chipura* had one day been a river of ten times its present volume. After a ride of some two hours, in doubling an abrupt turn where the rocks approached very near the water, I came suddenly into full view of an object some two hundred yards distant, which presented the most magnificent spectacle I had ever seen—a perfect cone, or pyramid of pure, brilliant snow, elevated at its base perhaps seven feet from the ground, upon a shaft of whitish bronze; the whole structure cut clear and sharp against the dark wall of rock in the back ground. I had in northern countries, after a calm fall of snow, seen many a white pyramid, having an internal structure of pine or spruce, but knowing that in the present instance the snow had fallen during a violent gale, and observing that none of the pines about me bore any traces of it upon their branches, I rode forward in semi-bewilderment, to investigate the phenomenon.

"It resolved itself, as I drew near, into a most perfect specimen of the *Gossypium Arboreum*, the perennial cotton-tree. Its foliage had long been shed, but the pods remained, having fully burst, and turned out their spotless samples in almost perfect roses, covering the entire structure with a dense mass of spotless, glossy cotton. I had often seen and examined indifferent specimens of the perennial cotton shrub, but I had never seen any thing even approaching in perfection that solitary tree.

"The remainder of that, and many a saint day thereafter, was devoted to intimate companionship with, and diligent study of the habits, peculiarities, and general economy of the beautiful *solitaire* of the *Chipura*."

Having since made this individual member of the cotton family the subject of careful study and investigation for several years, I shall endeavor to place its merits before the public, being fully impressed with the vast importance of an extended movement looking to its general introduction into the Middle and Northern States of our Union.

In the higher and colder latitudes of South America, on the confines of Patagonia, I found the *Gossypium Arboreum* attaining the dignity of a tree, the average size of the northern peach-tree, growing beautifully symmetrical and very compact, having its seasons, blooming and perfecting its fruit with great uniformity; giving an abundant yield of long staple, fine-fibred, pure-white cotton, fully equalling the best "sea island" ever grown.

On the Pacific side of the continent, I found the tree growing in the utmost perfection, in the parallel of 40° 10'. I also heard from the natives, accounts of its abundant and vigorous growth, fully three degrees farther south; but as I will vouch for nothing that I do not know to be a fact, nor presume to pass my own belief as current truths, I give my Patagonian information as obtained, simply suggesting that an Indian's information is very generally as reliable as that of the white man.

Certain it is, however, that I found the finest specimens of the tree, bearing cotton of the longest staple and whitest, finest fibre, in a region where the snow lies three months out of the twelve; where the vicissitudes of climate are greater than they are in New England; and where not only the natives, but the furred animals, sometimes freeze to death. On the Atlantic side the *Gossypium Arboreum* grows spontaneously and entirely hardy, as high as the parallel of 42°. That the tree readily adapts itself to all reasonable and very many unreasonable conditions of soil and climate, is conclusively proven by the fact of my having found it growing bravely at an altitude very nearly approaching the snow-line, on the eastern slope of the Bolivian Andes, in a soil as red with peroxide of iron as a well-burnt brick, and almost as hard. In the Desert of Alcamaya, I found it growing most determinedly in a bed of volcanic scoria, where never a drop of rain falls. In the vicinity of Arica and Tacna, in Peru, it thrives and produces cotton, growing in a waste of arid, burning sand. In the delta of the Guayaquil, it flourishes in an eternal quagmire; and on the eastern slope of San Gauy it clings to the bare calcareous rock, and lives. Everywhere in the low countries of the tropical regions, both the tree and staple degenerate; the former, in all cases, into a shrub, of from nine to twelve years duration; the latter always into a coarser, shorter, and under many conditions, into a material of no commercial value. In Peru, however, there are a few localities in which the tree-cotton grows spontaneously, giving better results than shown by the general rule in a similar climate. In the valley of the *Chira*, latitude of 3° south, there has been, ever since 1851, an annual produce of perennial cotton, of six thousand bales, of one hundred and fifty pounds each, mostly of spontaneous growth; and any time during the past six years, worth in the port of Paíta, whence it is shipped to England, sixteen dollars per hundred pounds—evidence conclusive that it is better than the best Louisiana.

Again, in the parallel of 12° 40' south, and

at an altitude of six thousand eight hundred feet above the sea, there is, at the present time, a miniature plantation of perennial cotton, healthy and vigorous at the age of twenty-eight years, and yielding annually one thousand five hundred pounds of cotton per acre, of a quality fully equal to that grown in the valley of the *Chira*.

A variety of the *Gossypium Arboreum* is found here and there, throughout the greater part of South and Central America, and also in Mexico, and several of the West India Islands, which, by Linnaeus, has been distinctly christened *Gossypium Religiosum*, through the property of that chistening, given though it was by the great naturalist, we cannot quite understand; for very certain it is that the variety, being only of climatical necessity, no more entitles the shrub to a distinctive classification, than does the accident of locality and peculiar cultivation of the herbaceous plant entitle it to become the parent of a new race of cotton. In the great majority of instances, the produce of these cotton shrubs, whether within or without the tropics, is quite valueless for spinning purposes, as it lacks length of staple and strength of fibre; hence the time expended upon experiments with plants or seeds of this variety of the *Gossypium Arboreum*, would be uselessly thrown away. Our own opinion is, that in order to produce the perfect, hardy, symmetrical tree, capable of bearing a good quality of cotton, the seed, or cuttings from which the tree is produced, must come from a region having a soil and climate corresponding to that into which it is to be introduced; thus with the material to propagate from coming from a cold southern latitude, they are of themselves hardy and capable of producing a perfectly hardy tree.

I am fully aware that the almost unanimous verdict of scientific men is opposed to such a theory. They maintain that, under all proper conditions, like produces like; and that the seed of the *Gossypium Arboreum*, bring it from where you will, will inevitably produce just such perfect, vigorous, symmetrical trees as are found growing in a high, cold latitude, provided they are planted in one of corresponding temperature. I am perfectly willing to bow to the supremacy of science; but not quite prepared to endorse all scientific theories, where such endorsement can possibly compromise my own integrity of opinion, or in any manner endanger the popularity of a movement which, being accepted by the public at large, will, I verily believe, forever preclude the possibility of any future difficulty such as now distracts our country.

The declaration that cotton cannot be successfully grown far north of a parallel which has hitherto bounded the herbaceous cotton empire, is wholly unsupported by either fact or philosophy; for as there is no thing strictly tropical in the constitutional structure of any member of the *Gossypium* family, there can be no legitimate argument adduced why even the common herbaceous plant of the South, its habits having been changed by careful nursing into the hard-wooded shrub, should not be successfully grown at least five degrees further north than it has hitherto been cultivated.

In regard to the cotton-bearing tree, the objections that have hitherto been expressed against the feasibility of its northern growth, are not even founded on prejudice; for in absolute ignorance upon a subject, no such sentiment can exist. They are only thoughtless denials, founded upon nothing; just such denials as were once patent throughout our country, when any innovation upon old-time standstillism was suggested. A long time and stubbornly the non-progressive dark-lanterns of our country stoutly opposed the idea of improving our stock by importation of foreign breeds; unqualifiedly denied the possibility of perfecting a good grape in our climate; named all improvements, impossibilities; clinching all declarations, and cutting off discussion, with woman's favorite and unanswerable clincher—"Can't do it, because you can't." Experience in all these matters has long since given a positive negative to all such disclaimers; and just as positively have my own experience and experiments with the tree-cotton, refuted the declaration sometimes made, that no good cotton can be successfully grown in a cold climate. True it is, that the demonstration is not, as yet, so universal as to become arbitrary, as in the case of a thousand other improvements; but if an enlightened public be willing to accept truth for truth's self, I have no fears for the result.

Assuming, then, that very good cotton can be successfully and profitably grown in a wide territory of the northern states, let us consider statistically the advantages the northern and middle states may gain by its general introduction.

Firstly: not more than three-fifths of the free states are, at the present time, under cultivation, leaving ample breadth for the production of a world supply of cotton, without in the least interfering with the general economy of agriculture as now practised, producing a crop more remunerative than can possibly be afforded by slave labor in the South. Let us investigate:—

The average yield per acre, taking the whole cotton-bearing region South, is one five-hundred-pound bale per acre. A good field-hand will plant, cultivate, and harvest four acres, making in the aggregate two thousand pounds per hand. This, at ten cents per pound, gives a gross total of \$200.

The interest on a good field-hand is \$80 00
Insurance " " " " 12 00
Clothing and food " " " 70 00

Medicine, doctor's bills, and loss of time, say 20 00

\$182 00

Leaving a margin of \$18 gross, or \$4 50 per acre, which is not infrequently more than absorbed by divers incidental expenses, always more inevitable and exorbitant in the South than in the North; thus showing conclusively that cotton-growing *per se*, is not in the South, a remunerative branch of agriculture.

It is very true that there are numerous instances all over the South where a single slave will produce ten and twelve bales of cotton per annum. But these are only exceptions to the general rule.

The *Gossypium Arboreum* once introduced, and having attained its maximum of production, will afford fifteen hundred pounds of clean lint per acre, and an ordinary farmhand can easily attend to, and harvest five acres. Making the standard price ten cents per pound, and we have for the five acres a total of \$750. This will be produced at a cost which can be fairly estimated as follows:

Twelve months' services of one hand, at \$12 per month, \$144 00
Year's board, at \$10 per month, 120 00

\$264 00

Which being deducted from \$750, leaves a balance of \$486 20 per acre.

In the above estimate I have considered the interest on land, cost of culture, and fertilizers, the same both North and South, and also charged the Northern crop with a whole year's board and labor, whereas, eight months of each is in reality all that ought to be placed to the debtor side of free cotton account, while the expense of the Southern planter in his slave producer, is continuous, whether employed or unemployed, so that in strict justice, full thirty-eight per cent. ought to be placed to the credit side of the Northern-grown cotton, over and above the foregoing estimate.

In consideration of the numerous inquiries constantly being made in regard to planting, culture and care of the South American cotton-tree, the necessary instructions may, very properly, be appended here as a conclusion to the foregoing remarks.

As the small sample of seed on hand, were sent me from a region of Peru whose low thermometer range arises from altitude instead of latitudinal necessity, I confess to a doubt of their entire hardiness and capacity to at once produce the fully developed, symmetrical tree, defying frosts, and all the rigors of a severe climate, as in the case of those I found growing on the confines of Patagonia. Hence, I recommend that these seeds, if planted during the winter, should be planted in eight-inch pots, filled with woods mold composted with light sandy loam; the seeds placed one inch below the surface, and the pots stood in some place having a uniform temperature of about 60°, until germination occurs; when they should be gradually moved toward a lower temperature. It would be better still to delay the planting until the first of May, and plant in the open air; select warm, rich soil, protecting the young trees from the frost of the first winter, by mulching thoroughly about the roots, and covering, as we do our rose-bushes. Having carried them through the first winter, they will, unquestionably, have taken on all the hardy habits of the Chilean tree, and will stand with entire impunity all future vicissitudes.

The seeds of the tree from the higher latitudes of Chili, which I can most fully endorse as capable of producing a tree in any northern climate, quite as hardy as the apple-tree, may be planted either in November or April. I would advise starting them in a nursery precisely as apple-seeds are planted, to be transferred to the field the second year, and there set twelve feet apart each way, cutting back the main shoot, to induce laterals, and always cutting down, in order to have the pods within reach of the hand, for the convenience of gathering. The land thus planted with a cotton orchard, may be every year cropped with any of the cereals, until the trees shall, by their breadth, have occupied the whole surface. All cuttings obtained by such prunings may be turned to good account, by simply thrusting them into the ground, as they will root kindly, and produce cotton at the second year.

Arrangements have already been made with Messrs. Mapes & Lockwood to obtain at an early day, both seeds and cuttings from the coldest regions where the *Gossypium Arboreum* is known to grow, and when it is received, due notice will be given to the public.

In conclusion, I would remark, that when scarcely more than a year ago, I first began publicly to discuss the possibility of growing a cotton tree in the free states, it was claimed that no one else had ever heard of such a thing. Now the unqualified testimony to its existence and merit is coming in from a thousand directions. One would imagine, from the verbal and written evidence of which I am now in daily receipt, that the perennial cotton-tree ought to have been in general cultivation fifty years since. I am in no way jealous of the knowledge possessed by others in regard to my protegee; but on the contrary, I would that every man and woman in our whole country were as well acquainted with the merits of the *Gossypium Arboreum*, as myself.

Lockwood & Mapes, No. 23, Courtlandt-street, New York, advertise that they have a small quantity of Perennial Cotton Seed from the northern part of Peru, for sale at one dollar per paper containing five seeds, which they will forward to order, post paid.