M.R.O. 1—39,000—16-10-29.

MADRAS RECORD OFFICE.

Government of Madras.

Revenue DEPARTMENT.

G.O. No. 2254 Press ~~Mis.~~

396-97. Dated 25-8- N 1868.

Not to be folded or roughly handled

Proceedings of the Madras Government, Revenue Department,
25th August 1868.

No. 396. Read the following Proceedings of the Board of Revenue, dated 6th August 1868, No. 5,693 :—

Read the following Proceedings of the Madras Government, dated 30th June 1868, No. 1,826, Revenue Department.

ABSTRACT.—Forwarding, for perusal and return, copy of Major Trevor Clarke's paper "On the improvement of cotton by purity of seed."

1. The pamphlet received is returned as ordered.
2. The following appear to be the most important subjects briefly treated of :—
   Under what circumstances American Cotton can be grown; effects of water supply; imperfect drainage; sudden checks to root action.
   Degeneration of New Orleans from prolonged culture within limited area.
   New Orleans altered by long cultivation in temperate climes, *e. g.*, Italy and Sicily.
   Experience in Brazil as to cultivation of New Orleans on worn-out sugar and cotton soil.
   Necessity for rigid isolation of sorts; purity of seed; and the special measures necessary for insuring it. Advantages as leading to correct nomenclature.
   Advisability of re-introducing Indian species into India from temperate climates; Greece, Turkey, &c.
   Advisability of trial in India of new sorts from Bourbon.
3. The Board regret that they have not been furnished with a number of copies of this useful and suggestive work for distribution.

No. 397. ORDER THEREON, 25th August 1868, No. 2,254.

Miscellaneous.

Resolved that 50 copies of the Memorandum be printed and furnished to the Board for distribution.

(True Extract.)

(Signed) R. A. DALYELL,
Acting Secretary to Government.

To the Board of Revenue.

Exd. F. R. Bantleman.

COTTON SUPPLY ASSOCIATION.

The following letter, which appeared in the "Cotton Supply Reporter," of September 1st, contains so much valuable information which would be useful to cotton growers, that the Executive Committee of the Cotton Supply Association deem it expedient to have it circulated in a separate form, and to direct special attention to it. The writer, Major TREVOR CLARKE, a highly accomplished botanist, has made it his special object for many years to promote an improved growth of cotton by hybridisation. The results of his experiments, and the knowledge which he has thus acquired, cannot fail to be of great advantage to all engaged in cotton cultivation, and a careful perusal of the letter is, therefore, earnestly recommended.

ISAAC WATTS, SECRETARY.

Newall's Buildings,
Manchester, September, 1866.

IMPROVEMENT OF COTTON BY PURITY OF SEED, &c.

To the Editor of the Cotton Supply Reporter.

My dear Sir,—The Consular reports of cotton-growing in Greece and Turkey, in your last issue, together with those from the Brazils, contain points of high interest, as showing under what circumstances American cottons can or can not be

grown in a general way. There can be very little doubt but that, soil and situation being fairly favourable, the question turns mainly upon the water supply, whether this be furnished by natural rains or artificial irrigation. The quantity of water that the cotton plant will take during the growing and flowering period, when cultivated here as a stove plant, is almost incredible, far surpassing that required by any other plant that has come under my notice during many years' attention to horticultural pursuits. I must, however, remark that no plant suffers so much from imperfect drainage or sudden checks to root action of any kind.

It appears also that the New Orleans is better adapted for general cultivation in these Levantine countries, than the black or naked-seeded breed, represented by Egyptian and its finer form, Sea Island. This would seem to indicate the advisability of trying the hybrid, or rather cross-bred plant, obtained between these two races, which has already shown good results, as you can testify, in India. But it must be borne in mind that neither this, nor any other improved sort, will remain free from what is called degeneration, unless kept up to the mark by occasional introduction of seed grown at some distance and interchanged.

It is certain that American cotton when grown in other countries suffers a change after a generation or two, and finally, if not ill cultivated as to rotation of crop, &c., attains to and remains at a certain standard or normal state of constitution and qualities due to the influences exercised by the climate into which it has been transported. It does not, however, as far as I have seen, depart from its type in any botanical particular. My plants from Dharwar seed were longer in the boll, more hairy, and shorter in staple than pure American New Orleans, but much the same in other particulars. The Italian and Sicilian cottons grown under the names of Siamese,

Castellamare, and Hirsutum are certainly New Orleans altered by long cultivation in temperate European countries; *and where such cottons thrive, good new Orleans would thrive also.* It may not be here out of place to remark that degeneration, from growing continually the same seed, in the same district, is not peculiar to cotton.

Another fact of great interest appears to be gradually coming out, to wit, that Sea Island *can* be grown elsewhere than in its celebrated quarters, when a sufficient amount of good cultivation has been bestowed upon it. The production of this staple in Italy is especially interesting.

The correspondence from Brazil points to the fact that old and worn sugar and coffee plantations will be maiden soil to cotton, and that good New Orleans and Sea Island are already in bearing, with a railway in progress to carry the produce to the coast.

But I must now turn your attention to a fresh subject, already, however, alluded to in my former letters, namely, the use of pure seed, to be effected by the rigid isolation of sorts. Next to a constant supply from any indicated source, the manufacturer requires a *constant quality of staple.* From accounts I have received, from credible eye-witnesses, the mixture of sorts in a cotton-field, especially in the West Indies, is inconceivable, the crop in some instances looking like a flower garden with different sorts, sizes, and colours. In one case my informant described the not unfrequent appearance of a red blossomed sort, evidently the Indian G. Arboreum, in his fields.

This is the work of the native labourer, who is either incapable or unwilling to see the difference between right and wrong, at any rate where his own interests are not concerned. His delight seems to be in reversing, confusing, or nullifying

especial orders the moment the master's eye is off, and the mixture of seed is generally his preliminary operation. In my own experience I rarely receive unmixed samples, and wrongly named sorts are continually sent home, although probably in good faith as far as concerns the sender.

The one and only remedy for this will be found in English skill, science, and energy, strongly exerted in this one direction. Experimental farms, at the expense of, or encouraged by, Government are nothing new; for a century or two these have been carried on spite of the perversity of man as well as that of the elements, and have borne their fruit. My modification, however, of the system would be this: *Let such establishments be entirely devoted to seed farming*, the sole effort being restricted to the production of pure seed in the country where it is destined to be grown in future. In this country no grower of seed, either for agricultural or gardening purposes, would now obtain a sale for his produce were he to supply his customers with mixed or inferior seeds. In the establishments of such persons the master himself goes through his crops several times a year for the purpose of destroying every plant which proves inferior or untrue to sort. This weeding process is technically and expressively called "rogueing" the crop, and is absolutely necessary to ensure purity and high quality. At the same time improvement by special selection is carried on; single plants showing high qualities are picked out for propagation, and the produce of these submitted even more rigidly to the same treatment.

The success which has attended the production of pure acclimated exotic seed has been sufficiently proved in the Dharwar district of India, and would, doubtless, lead to the same results elsewhere upon a like system. It is probable, moreover, that the increased amount of trouble would prove to

be laid out to profit, and show the beneficial results which invariably follow the employment of skilled labour. There is little doubt that private speculations of this kind would be very profitable. Fresh seed, in the case of exotic sorts, should be occasionally procured; and, where such refinement can be effected, this and the acclimated sort should be intercrossed, which would assuredly tend to keep up the standard of excellence in staple. In India the improvement of the native Gossypium Indicum and Arboreum might be carried on in stations set aside for the express purpose, and the capabilities of this race thoroughly tested. Here I might suggest the introduction of the Indian plant, in its acclimated state, from the temperate countries back into India again. The plant I allude to is the low-growing, obtuse-leaved, and more herbaceous form of Gossypium Indicum, cultivated and known by the name of "Native" in Greece, Turkey, and still more temperate climates; choosing of course the best acknowledged sorts cultivated in these places. I have examined and grown many specimens of the kind alluded to, sent to me from the association. They are all of the same type, and the best closely resemble some fine Dhollerah communicated by Dr. Forbes Watson from the India Museum. Persons conversant with agriculture will understand the drift of this suggestion—that of growing plants in a suitable climate from seed raised in one which is less favourable. Again, the Beraree and Dacca, forms extremely distinct from the last mentioned, might be introduced into Europe as a new field for experiment. The Bourbon, or "Wild Cotton" as it is called in the West Indies, has actually naturalised itself in India. Now there are several sorts in these islands, allied to or derived from this plant, which should be well worthy of trial in India on this account. The staple is somewhat scanty, but silky, often naked-seeded,

and of the Sea Island character. I hope shortly to produce some hybrids of this race for trial. They are, in fact, produced and growing, but, though crossed with the early-bearing Sea Island, they have taken the late fruiting character of the Bourbon parent, and I have not yet ripened a boll. This cotton would be much more grown in the West Indies were the staple more plentiful. I hope I may have effected such an improvement in the cross. In the meantime I have sent a few seeds out to the West Indies, and am awaiting the result. I am happy to say that a really scientific man, Dr. Imray, has taken up the subject of cotton improvement in the West Indies; judging from his first results, I think we may look for some magnificent cotton from Dominica. In Antigua the subject has been warmly taken up by the able and intelligent Governor of that island, and I believe by this time some of my favourite and best hybrids are growing in his garden, as well as in that of the learned doctor in Dominica.

To return to our subject. The necessity of introducing establishments of this kind in new or neglected countries is evident from the difficulty experienced in procuring seed that can be depended upon—in plain words, that will *grow* when planted, and prove *true to sort when it is grown*. There have been more instances than one in India where total failure was announced, nay, as it were, trumpeted to the world, where the only reason for want of success was simply that the seed would not come up. Ill-packed and uncared for on the voyage, or worthless in the first instance, it failed to germinate; and so "American cotton" was "unsuited for this district!" Moreover, I know an instance where seed was purchased and sent out to a fine cotton-growing country, wrongly named as to two or three at least of the samples, which wrong names are now established in that district. Thus we are liable to be

told that such or such a sort of cotton is unsuitable to the country, when the subject alluded to is altogether another kind. Three distinct kinds are sent out under the name of Egyptian, and the same thing occurs, even to a greater extent, in the case of Pernambuco and Peruvian. *Careful seed farming would lead to correct nomenclature*, and the manufacturer would at least know what he was buying.

I remain, dear sir,

Yours faithfully,

R. Trevor Clarke.

Printed at the Guardian Steam-Printing Offices, Cross-street, Manchester.

Rev: 2740/68

R 2232/68

Resolved that 50 copies of the Memorandum be printed and furnished to the Board for distribution.

25th August/68

14 Copies to the Bd. of Revs with 50 Copies of the Memo

Rev. 2254 - 6M