

India revenue letter : dated 15th March, 1839 (no. 4).

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INDIA REVENUE LETTER.

Dated 15th March, 1839. (No. 4.)

1. FROM the correspondence which has passed with your Government, as well as with the Governments of Madras and Bombay, you are fully sensible of the interest we have taken in the cultivation of Cotton, Sugar, and other articles of commerce suited to the European markets.

2. The full and interesting information which we have from time to time received from our respective Governments, has satisfied us that they are as deeply impressed with the importance of this subject as ourselves; and it has been very gratifying to us to find that the efforts which have been made in the formation of roads, the construction of canals of irrigation, and the alteration in the mode of assessment, have been felt and acknowledged by the agricultural community, and have to a considerable extent, especially in the article of sugar, been attended with encouraging success.

3. With regard to cotton, although the exertions have not been less unremitting, we are aware that the success which has attended the cultivation of this article has not been so great as could be wished.

4. With a view to extend, improve, and encourage the cultivation of cotton, experimental farms, and farms subsidiary were established, pecuniary advances made to individuals, and rewards granted to such natives as evinced zeal and ingenuity in the prosecution of the object. Seed, in considerable quantities, was procured from Egypt, Bourbon, the Brazils, and from North America. Saw-gins, used with so much success in the latter country, and in the West Indies, were sent to India, and a gentleman*, who resided for some years in Georgia and New Orleans, was deputed to superintend the working of them.

5. From the best information we have obtained from your records, and from other sources, there appears no reason to doubt, although this great desideratum has not yet been obtained, that, under proper ma-

* Mr. Metcalfe.

nagement and superintendence, India is capable of producing cotton in quantity and quality to compete with the cotton from North America, which the best Bombay cotton, (Surat,) cleaned by the Churka, often rivals; but that to accomplish this, the following essential points have still to be gained: viz., more full information as to the most approved mode of culture, with reference especially to the selection of soil and climate best suited to the several varieties of the plant, and most genial to it. More complete information and instruction, with regard to the time and manner of gathering the cotton from the pod, and cleaning it by means of machinery sufficiently rapid to produce the article in large quantities without injury to the staple.

6. Referring to your proceedings, and to the instructions which have from time to time emanated from us, and with reference especially to our dispatch, dated 28th March, 1838, we are not aware that any further instructions for your guidance are necessary.

7. The great importance, however, which we attach to the acquirement of the knowledge above referred to by the natives of India, and the right application of it by them to the attainment of the objects contemplated, have induced us to take into consideration the propriety of deputing persons to North America, with instructions to obtain full information on the subject, and, if possible, to engage parties willing to proceed to India, and duly qualified for the purpose of instructing and superintending the natives in the cultivation of the cotton, and the proper mode of cleaning it by means of machinery; and we rely on your exertions for adopting effectual measures, and affording facilities for promoting and extending throughout India any plans which may seem best suited to the attainment of the important objects contemplated in this despatch, so soon as you may receive the necessary information.

8. Should you be of opinion that the important objects we have in view will be further promoted by the offer of a reward to each of the Presidencies for the exhibition of a certain quantity of cotton properly cleaned, we authorize you to offer rewards of such an amount as you may consider sufficient to stimulate parties engaged in the production to exhibit cotton, of good growth, and cleaned by machinery. We are of opinion, however, that the quantity of cotton so exhibited should not be less than 300 bales.

9. We transmit for your information copies of memorials we have recently received from the Chambers of Commerce at Glasgow and Manchester, and from the East India Associations of Liverpool and Glasgow, on the subject of cultivating cotton in India.

10. You will perceive that many of the statements in these memorials have been made in the absence of correct information regarding the measures which have already been adopted, with a view to encourage the growth in India of various staple articles of commerce, including that of cotton. We have informed the respective parties that the subject would continue to receive our attentive consideration.

11. In the memorial from the East India Association at Glasgow, our attention has been drawn to an improved machine for cleaning cotton on the principle of the Churka, three of which are about to be forwarded by the society to Bombay. We have requested the association to procure for us four additional machines, two of which we propose forwarding to Bengal, and two to Madras.

12. This machine, it will be observed, is stated "to clean most satisfactorily the Kupas sent from Bombay." The experiment, however, being as yet confined to this country, we shall not be justified in giving the reward alluded to by the society, until the power of the machine has been fully proved, by being successfully applied near the place of growth, and soon after the gathering of the cotton.

MINUTE

BY

THE GOVERNOR-GENERAL OF INDIA.

Simla, August 14, 1839.

I HAVE retained this dispatch for some time, in order that I might examine with attention the information which has been published from different quarters, on the result of past proceedings in regard to the highly important subject to which it relates. All the value of success in introducing in India a better produce of Cotton, suited for the immense manufactures of England, is fully appreciated by me; and it is fitting that, renewed and special exertions being again directed to the prosecution of this national object, our measures in furtherance of them should be well considered, and be as complete and effectual as circumstances will admit. We are simultaneously labouring, with fair hopes, to secure the establishment of a profitable tea culture in India: and it will be one fortunate consequence of the state of our Chinese relations, if, in respect to the production for the European market of two such valuable articles as tea and cotton, it should give, as seems probable, an active stimulus to the agriculture and commerce of this country. In no other channel can the capital and enterprise, which have at Bombay been heretofore employed on the trade in opium, be now turned with better prospect of advantage, than to the amelioration of the cotton produce of that Presidency, which already commands some partial sale among the English manufacturers, and affords a very promising encouragement to further persevering experiment.

2. The authorities which I have consulted on the subject are named in the margin*, and they appear to supply full and accurate information

* For India generally.—“Reports on the Culture and Manufacture of Cotton Wool, Raw Silk, and Indigo, in India.”—Printed by the East India Company, Dec. 21st, 1836, pp. 1 to 431. For

on the condition of the cotton cultivation, and of the success or failure of the attempts made for its improvement, at the several Presidencies.

3. Before, however, I proceed to notice the conclusions which may be deduced from those authorities, it may be convenient that I should first briefly allude to the general principles by which I think that a government should be carefully guided in its efforts to fix in its territories the growth of any better articles of produce, of whatever interest or importance, with reference particularly to some of the propositions which have been, and are likely to be urged upon us, by parties laudably eager for the accomplishment of the great ends in view.

4. The following are the chief propositions of this nature, which I find in the papers and publications before me:—

1st. That there be an alteration in the rate and mode of taxing cotton lands,—the rate being erroneously supposed to be a maximum one, and the amount often taken in kind, thereby* “inducing the grower to produce quantity or weight without regard to quality or cleanness.”

2nd. That † encouragement, or reasonable inducement, be afforded to the influx of capital, and to its application to this particular cultivation. A special mode of encouragement is indicated in “the ‡ offer of a fitting bounty, either by reducing the assessment on lands on which foreign cotton seed is grown, or by stimulating industry by large grants as prizes.”

3rd. That experimental farms be instituted, and rewards given for improved produce, or for improved machines for cleaning the cotton, this last being the great desideratum, especially as regards the cotton of Bombay. Seeds to be also procured of the best foreign cottons, and freely distributed.

4th. That the transport of produce be facilitated by the formation of roads, and its preservation and shipment by the erection of suitable warehouses or sheds, and of quays at the ports of dispatch.

5. Of the first of these recommendations, I need say little, as it is

For the Bombay Presidency specially.—“The Government of India.”—By Sir John Malcolm, pp. 108 to 133.

For the Bengal Presidency specially.—“Summary by the Secretary to the Agricultural and Horticultural Society of India,” dated June 10th, 1839, in “Proceedings for June, 1839.”—pp. 33 to 59.

* Manchester Memorial.

† Glasgow Memorial.

‡ Summary, by the Secretary to the Agricultural Society, p. 59.

now the general rule and practice throughout India that the assessment on land cultivated with superior products shall be no higher than the average rate of land of similar quality, whatever the crop reared on it; and the custom of taking revenue in kind is nowhere retained. It is to be observed, however, that it is stated by Sir John Malcolm, in his work before noted,* that when the system of taking the revenue of cotton in kind did exist in the Guzerat districts, under the Bombay Government, its effect was not to deteriorate, but from the steady attention given to the subject,—(the Government share of the crop being taken at a valuation in proportion to the care with which it was gathered,) greatly to improve the quality of the cotton, there having been a decided falling-off in cleanness since the abolition of the system. The same remark has been conveyed to me in a private communication with which I have been very recently favoured by a correspondent of high authority at Bombay:—"I believe (he says) that it is the general opinion, that cotton is very rarely obtained now in a state of cleanness and of fibre equal to that which long ago was received by the Honourable Company as revenue in the Baroach districts." The purchases of the merchants of Bombay are, it is added, chiefly made at that place, and the agency which is in contact with the cultivators in the interior is almost wholly that of natives, uninstructed, and thinking only of what may seem best for their immediate interests. A laudable instance is, however, mentioned in the same letter, of exertions made within the last year or two for the introduction of a better system in this respect, by a Parsee merchant of enterprize, (named Merwanjee Hormagee,) some bales of Baroach and Surat cotton sent home by whom, last year were valued at a 1*d.* a pound above the usual quality of good Baroach cotton, and $\frac{1}{2}$ *d.* above the best which had been known to have been before imported from India.

6. In respect to the second of the recommendations also, I need not, after the minutes recorded† by me on other occasions, dwell at any length on the conclusive objections which I feel to all artificial fosterings of the devotion of capital to particular employments, by the remission of ordinary rates of assessment, or by any other systems of bounties. Such plans lead to improvident and unsafe speculations,—they make the Government, in a manner, responsible for the fortunes of individuals,—and they are unjust to enterprize in every other department of exertion.

* See p. 113 to 116, for details, on this point.

† In 1836 and 1837, on the remissions of assessment on "ground planted with Mauritius sugarcane, &c. in Bombay.

It will suffice to say, that my objections to schemes of this description are as strong as they have always been.

7. The third mode suggested for assisting the object by experimental farms, or other expedients of a like strictly experimental character, by a few well-arranged honorary or pecuniary rewards, and by the importation and distribution of seeds, appears to me to comprise some of the most legitimate means of a special kind which the Government can use in aid of the proceedings of private parties or associations. I have no good opinion, especially with such limited and transient agency as we possess in India, of experimental farms, where the cultivation is to be conducted entirely by Government superintendents and servants. But an experimental superintendence and encouragement, on a carefully-regulated and measured plan, of the efforts of private cultivators, may, doubtless, under different circumstances, be productive of important benefit. To suitable measures of the character here referred to, I would do all in my power to secure a consistent and effective support. I shall hereafter propose to consider whether any such measures are now necessary on the part of the Government in India, in addition to those previously adopted, and in advertence to those specifically referred to in the present dispatch of the Honourable Court.

8. As to the formation of roads, I fear that however valuable a really permanent and good road unquestionably is for all purposes of national improvement, the hope of maintaining such roads, on an extensive scale in the vast and poor territory, and unfavourable climate of India, is not, for yet many years, to be entertained on a sober estimate of our difficulties and means. Unmetalled roads in this country, though they may be a convenience at other times, are yet, during the season of the heavy rains, nearly useless; while the expense of forming and keeping up metalled roads throughout our territories must be so enormous, and can so little be relieved by any possibility of repayment, as to be apparently beyond the limits of all prudent outlay on the part of the State. The main practicable facilities for communication in India, excepting as regards a few great and permanent lines of intercourse between capital cities, to which the application of a large outlay has already been sanctioned or is contemplated, must, I fear, for a long period, be principally found in general protection against violence,—in the building of bridges,—in the regular establishment and management of ferries, or other measures for assisting the passage of streams,—in the clearing of hill or jungle passes, and in other like works of local convenience. Happily, however, any impediments which can arise from the want of good roads,

will, for the present, apply* only partially to the detriment of our cotton produce. For the best Indian cotton, that of Surat and Baroach, is grown in districts close to the sea; while, in the upper provinces of Bengal, the cotton of the Dooab and Bundelkund can readily be transported by our great rivers. In respect to warehouses or sheds, and quays, at the ports of dispatch, they are doubtless very desirable, if not necessary; for it is remarked by Sir John Malcolm †, that in the Guzerat districts there is a very short period between the date of plucking and that of shipping the cotton for Bombay; and "it is believed, the erection of buildings calculated to preserve the cotton not exported during the monsoon, would give great encouragement, and increase production." But the building of warehouses seems rather the province of the private merchant than of the Government. It may, however, be very proper to inquire from the Government of Bombay, whether there are any local reasons which in Guzerat would render the interference of the State useful and expedient for such a purpose, as well as whether there is a want of suitable quays at any of the ports.

9. In the remarks in the preceding paragraph, I would by no means be understood to discourage a serious attention to the subject of the improvement of our roads, generally, but rather only to lament the obsta-

* The circumstances to which I have referred, in this paragraph, affecting the formation of roads in India, and particularly roads to the cotton districts, appear to have been in some measure overlooked in the following remarks from the useful work entitled *Progress of the Nation*, by Mr Porter, introduced after a passage pointing out the importance of roads for the advancement of Indian commerce. "Good roads," he says "would be practicable at all periods of the year, and in every part of the country. This improvement is especially needed in the cotton-yielding districts, where the present expensive mode of conveyance upon the backs of oxen acts most injuriously."

It will, at the same time, be very proper that the several governments should be called on to state, in furnishing the reports which I shall hereafter indicate, whether there be any road to their cotton districts, the construction or improvement of which deserves particular consideration.

I would add, on the subject of roads, that, in the Revenue Settlement of the North-West Provinces of the Bengal Presidency, a systematic arrangement is made for the repair and extension of the communications in the interior of districts, by a cess of one per cent. on the amount of the government jumma, or tax, levied and appropriated exclusively for that purpose. The disbursement of this cess is managed by a local committee, and it has been gratifying to me to learn that, in some districts, the application of these funds is giving to natives of influence a warm feeling of interest, and a habit of co-operation, for the general improvement of the country in which they reside.

† Work, as above, p. 129.

cles which are opposed to success in such undertakings. I would here, however, refer with gratification to the great facility which has been extended to all internal intercourse by the abolition of transit duties throughout the Presidencies of Bengal and Bombay;—a boon, I trust, to be soon also conferred on the territories of Madras. From this measure we may look for the best effects in the quickening of every enterprise, which may seem to rest upon really solid foundations.

10. I may now go on to remark the results of past endeavours to improve the quality of Indian cotton in the several Presidencies.

11. The Cotton of Commerce consists of two great varieties,—one, the black seed, or long staple, of which description are the American Sea Island, the West India, the South American, the Bourbon, and the Egyptian cottons*, bearing a higher price in the market than other cottons, but in comparatively restricted demand; the other, the green seed, or short staple, of which kind are the Upland Georgia and New Orleans, (these forming the main source of supply to our English manufactures,) and the great bulk of the indigenous cottons of India. Of the general value and use of these different varieties in commerce, a paper in my possession gives the following information. “The cotton in greatest demand for the larger portion of the manufacture in England is the bowed Georgia cotton, which sells from 7*d.* to 9*d.* per pound in the market. The India cotton, which most nearly approaches to it, is that which sells in its present unclean state, at about 5½*d.*, and if it could *be delivered as clean* as the bowed Upland Georgia cotton, *with a little improvement in the staple*, it would sell in England at about 7*d.* per pound, *to the extent of several millions sterling. Fine cotton producing a higher price is only of limited demand.*” The modes of separating the two kinds of cotton from the seed are dissimilar. The Upland Georgia and New Orleans cottons are so cleaned by the machine called “Whitney’s Saw-Gin,” which is considered to have been “hardly † of less importance, generally, than Arkwright’s Machinery.” This machine appears to occasion some injury even to the short staple of these cottons, but the loss on that account is more than counterbalanced by the gain in time to the process of cleaning. To the long staple cottons, however, this instrument is destructive, by the manner in which it cuts them, and other means are employed for the purpose, those cottons separating from the seed with much greater facility than the

* Understood to have been introduced from Pernambuco seed. See p. 280, Report on Cotton Wool, &c.

† Ibid. &c., p. 9.

green seed species. A machine called a "Roller Gin*" is employed for the American Sea Island cotton, and the Egyptian cotton is described to be "separated† from the seeds by means of a machine worked by manual labour, such as is made use of in South America for cleaning long staple cotton." The Indian cotton is generally cleaned by an instrument called a "Churka," which answers the purpose sufficiently well, but is comparatively slow and expensive‡. "Whitney's Saw-Gin," so successful in America, might naturally be thought to be adapted to this short staple cotton, but it has been unfortunately found at Bombay, from some cause, "whether§ the method of working it, or the weakness of the fibre of the cotton," to injure the staple seriously, and some modification of this, or an altogether new machine, appears consequently to be absolutely required. The Honourable Court, in a despatch to Bombay, of March 6th, 1832, have suggested that the "Saw-Gin," notwithstanding its unsuitableness to the indigenous cottons, might be used for cleaning cotton raised in India from *American* seeds. In Bengal, the "Saw-Gin," for cotton of a generally similar character, has been favourably reported of at Calcutta||, and unfavourably at Calpee. It is with the view of overcoming the difficulty occasioned by the presumed inapplicability of the "Saw-Gin," that the East India Association at Glasgow have recommended their improved machine for cleaning cotton, (referred to in the concluding paragraphs of the Court's present dispatch,) "on the principle of the Indian churka," and stated, "to clean most satisfactorily the Kupas¶ sent from Bombay."

12. The total importation of cotton into England, taking the three years**, 1831, 1832, 1833, varied from 288,000,000 to above 300,000,000 of pounds in each year, and of this quantity, the cotton of India furnished not more in any year than 38,000,000 of pounds††, a large proportion of which was to be re-exported to the Continent, where

* Sir J. Malcolm's Work, p. 122.

† Ibid. p. 132—note.

‡ The process of cleaning by the saw-gin is four or five times more rapid than by the common churka.—Ibid. p. 133.

§ Report on Cotton Wool, &c., p. 263, and see p. 214. Sir J. Malcolm, p. 123.

|| Ibid. &c., pp. 197 and 227 to 231.

¶ Cotton with seed.

** Report on Cotton Wool, &c., p. 19.

†† In 1836 the total quantity imported was 406,959,059, of which, from the East Indies and Mauritius, 75,746,226.—Official Tables, published for Parliament, 1838, p. 14.

there is some sale for inferior cotton. In the years 1818 and 1819 the importation of Indian cotton into England had reached as high as 86,000,000 and 62,000,000 of pounds; but this may probably have proceeded from some merely temporary causes.

13. The great export of Indian cotton to England is from Bombay, to which port the cotton from Oomrawattee and the Deccan, which was formerly brought to Calcutta *via* Mirzapore, is now carried. Of the Bombay cottons, those from Baroach and Surat are used, though inferior, in consequence of the foul state in which they are transported, in the English manufactories*, and the rest are almost entirely sent abroad again to the Continental Markets. The following is a general account of the Indian cottons, as saleable for working † up in England. “The Bengal ‡ may be fairly considered to be *out of use* with the British manufacturer. Surat cotton, such as a good portion of the imports of 1817 to 1826 consisted of, (that is, good, clean, bright coloured, thomil§ cotton,) would always find a consumption to a certain extent; which, of course, would be increased if the staple could be a little improved by the introduction of seed from America, particularly from New Orleans. The best quality of the Bombay cottons have always been considered to be the Baroach and the Surat, which in good seasons are equal in staples to middling bowed Georgia.”

14. The first efforts of the Home Authorities were particularly directed to the cultivation of the Bourbon cotton; but this was checked by the circumstance || “that the consumption of cotton having a long silky staple is very limited, and that the demand of the British or Foreign manufacture does not require a large supply of such cotton.” A gentleman, named Mr. Fischer, seems to have, at a recent period, found it profitable to cultivate Bourbon cotton in the Salem district ¶ of the Madras territories, but this can only be regarded as the experience of a single speculator. Mr. Bernard Metcalfe, who was employed by the Court to conduct the experiments in the Madras Presidency in 1815, recorded some remarks which may be useful at this time.**

* See Notes to pp. 111 and 127 to Sir J. Malcolm's Work.

† Paper by Mr. Hunt. Report on Cotton Wool, pp. 422, 423.

‡ This includes the cotton of Bundelkund and the Doob.

§ This signifies, I believe, cotton of the first picking of the crop.

|| Report on Cotton Wool, &c., p. 120.

¶ Ibid. &c., p. 246. Report of Principal Collector, Salem, May 8th, 1833.

** Ibid. &c., pp. 417, 418.

“The Georgia, *Sea Island*, the *Surinam**, and *Demerara* are all grown on the border of the sea, and the prime qualities only, as far inland as the influence of the sea air and tide waters extend. In the Delta of the Sunderbund, and particularly the provinces adjacent, might perhaps be produced cottons of an equally fine texture with those above-mentioned, and which in England always bear so high a price. The presumption is, the attempt would be successful, provided the black seed was procured from Demerara or Georgia.”

15. In 1828 †, the further prosecution of experiments was urgently pressed by Lord Ellenborough then President of the Board of Control, and was warmly entered on by the Honourable Court, the particular object being to see by trial “in many different parts of India, whether it might not be possible to raise some of the superior sorts of foreign cotton,” while at the same time the utmost possible care should be given to procuring the best specimens of the indigenous cottons. To Bengal ‡, the Court specially pointed out that some cotton produced in the Tenasserim provinces was “considered to be superior to any cotton that has been imported from Bengal, and if in a perfect condition, would rank in the London market with very good Surat cotton, and with middling North American upland.”

16. With the above objects in view, experimental farms were instituted in the Bombay and Bengal Presidencies, rewards were authorized, and foreign seeds of different descriptions were largely imported, and distributed in different quarters.

17. The result of these trials has certainly been attended with much encouragement. “Most § of the specimens which were the produce of indigenous seed, and had been carefully cleaned in the native manner, proved of qualities which are desirable for manufacture in England. Some fine samples were also raised from the foreign seeds.” The favourable impressions produced by the trials on the Honourable Court, is stated in their dispatch now before us.

18. In Bombay, an experimental farm, with some smaller ones subsidiary to it, was || established in Gujerat. But the Superintendent soon reported that “no improvement was to be expected from any alteration *in the mode of cultivating* cotton” in that province; and the

These, it will be noticed, are long-stapled cottons.

† See Report on Cotton Wool, pp. 133 to 136. Letter of October, 7th, 1828.

‡ Ibid. p. 147.

§ Ibid. &c., pp. 11 and 12.

|| Ibid. &c., pp. 252 to 269.

plan adopted was to let out, in the manner which I have before said that I am most disposed to approve, parts of the government farm to native farmers to be cultivated under his general direction, he reserving only a small portion of the land for the purpose of being cultivated entirely by himself, with foreign seeds exclusively. The chief point of importance was soon seen to be a greater care in the first gathering of the cotton. To this object almost alone the attention of the Government was directed in the experiments made in the Southern Mahratta country. The superintendent in that quarter reported* :—“The presence of the leaf, which grows under the cotton pod, is the main cause of the inferiority of our Indian cottons in the English market ; this, with other impurities, gets into the mass of cotton in the act of picking in the field, and under ordinary circumstances, cannot afterwards be got rid of. The radical remedy for this is to pick the cotton in the field with greater care, as is done in America, by carefully pulling the cotton out of the pod, and not snatching at the pod itself, and separating the cotton picked into two portions, one of the first quality free from leaf and dirt, and the other, such as may be entangled with the leaf and other impurities.” The strongest evidence to the same effect is given by all authorities †. Mr. Hunt, an English dealer, says ‡,—“It appears to me, that the cause of the depreciation (of the Surat cotton) is principally owing to the very slovenly way in which the crop is gathered from the plant, and without a thorough reform in that particular, it will be of little use introducing new seed, or increasing the expense of cultivation in other respects.” This point being so material, it is especially to be regretted that the superintendent in the Southern Mahratta territory experienced great difficulty § in persuading the Ryots to follow a better system respecting it. And it is remarkable, that though it must have been well known at Bombay that it was by attention in gathering || the cotton, that the Government, while it received a revenue in kind in this article in Gujerat, had so considerably improved its quality, the object appears, as has been before said, scarcely ever to have been thought worth the care of private capitalists. Mr. Lush, the superintendent above referred to, was ultimately authorized by the Bombay Government to establish an agency near Darwar, with a view

* Report, p. 203.

† See for Guzerat Report, pp. 253 and 256; and Sir John Malcolm, p. 112.

‡ Report, p. 423.

§ Ibid. p. 262.

|| Sir J. Malcolm, pp. 113 to 116.

to the purchasing, as an inducement to the Ryots, their well-gathered clean cotton, with what effect I have not the means of ascertaining.

19. Details of the valuation prices, both of the indigenous and foreign seed cotton raised and sent home upon these experiments, are given in pages 272 and 280 of the *Report on Cotton Wool, &c.*; and although the injury before alluded to from the use of the saw-gin was very considerable, it will be observed, that the prices are rated generally above the 7*d.* per pound, which in a preceding extract is mentioned as a sale value at which several million sterling might be expected to be disposed of. Some cotton from Egyptian seed is noted as worthy of particular attention, (it being added, respecting this quality, that it should be well cleaned in the native manner,) and the same as regards encouragement to production is said of the cotton from New Orleans seed, and of some white seeded perennial cotton grown in a small experimental farm, under Mr. Lush, in Darwar.

20. A fresh supply of Egyptian seeds, and of the machines used in that country for the cleaning the cotton, was sent to Bombay in the course of 1836*; but the result is not reported in the papers in my possession.

21. It may be regarded, I think, as probable, from the foregoing summary, that by inventions such as may be reasonably expected from European mechanical skill, the means of quickly and safely cleaning the indigenous cottons of Bombay in so far as regards the separation from the seed after gathering, may be attained, and that, for the improvement which may be desired in the staple of the cotton of Bombay, we may look, with fair hope, to the growth of the article from the best foreign seeds.

22. In Bengal, the result of the experiments made has also been encouraging†, though it is to be remembered regarding such results in all the Presidencies, that the growth of mere specimens is far from being a test of success in attempts to rear a produce of extensive cultivation. The cotton of the Akra experimental farm, the maintenance of which did not extend beyond three years, was in England, partly by actual sale, and partly by valuation, above the specified rate of 7*d.* per pound, and good specimens from various kinds of seed have been also produced in different other parts of the Presidency. The conclusion arrived at in the paper of the Secretary of the Agricultural Society is, that the "Upland Georgia and Egyptian is the seed best calculated for introduc-

* See Report, &c., pp. 283 to 292.

† Summary by the Secretary to the Agricultural Society.

tion into the interior and upland parts of India, while the Pernambuco, Peruvian, Sechelles, Bourbon, and Sea Island, may suit best along the line of coast."

23. The seed sent to Madras appears generally not to have succeeded*, chiefly from a very unfavourable season. Yet the valuation at home of some small† samples of American seed cotton, raised in the Madras districts, is satisfactory.

24. The Honourable Court have now determined to procure from America, and send to India, persons "duly qualified for the purpose of instructing and superintending the natives in the cultivation of the cotton, and the proper mode of cleaning it by means of machinery;" and they "rely on our exertions for adopting effectual measures, and affording facilities for promoting and extending throughout India any plans which may seem best suited to the attainment of the important objects contemplated, as soon as we may receive the necessary information." They empower us also to offer rewards at each of the Presidencies of such an amount as we may consider sufficient to stimulate parties engaged in the production to exhibit cotton of good growth, and cleaned by machinery; the quantity so exhibited not being less than 300 bales."

25. It behoves us to prepare for the arrival of the individuals to be brought from America, who will be conveyed to India, if possible, by December next; and in this view, and that we may be ready to acquit ourselves of the further responsibility imposed on us by the preceding instructions, I have endeavoured briefly to extract what has seemed to me most material in the reports of past proceedings. I shall be glad if I shall have succeeded, (though I cannot hope to have done so otherwise than very imperfectly,) in assisting the collection of materials which may enable the Governments in India to decide upon a proper course in regard to this important question, I would now suggest that a copy of the Court's dispatch, and of this Minute, with such further observations as may occur to His Honour the President in Council, be furnished to each of the Presidencies, and that the several Governments be requested to report their opinions, on a review of the facts above detailed, and after consulting the individuals or bodies most likely to afford useful advice, as to the best means of carrying on future experiments with the aid of the American workmen‡ to be now employed, and how the knowledge in

* Report on Cotton Wool, pp. 237 to 251.

† Ibid. &c., pp. 271 and 272.

‡ These men will be directed to bring with them large quantities of the best descriptions of American seeds.

which those persons must be deficient of the languages, seasons, and agricultural habits of India, may best be supplied. The particular districts the most suited for their employment should also be named; and the description of foreign seed cultivation most likely to succeed in each district. The length of time for which an experiment should be persevered in, should likewise be well considered, for such partial results, as for instance, were derived from the Akra farm, near Calcutta, may not lead to any satisfactory conclusions. The several Governments should further report what amount, and manner of reward, they would propose to confer for cotton, well-gathered and well-cleaned by machinery, under the discretion which has been confided to the Government of India. The local Governments may at the same time inform us how far the arrangements actually in force, whether by public or by private means, for disseminating the best foreign seeds throughout the country are effective. In Bengal, I believe this object to be well provided for by the excellent measures and admirable zeal of the Agricultural Society of India. To that Society I consider the Government and the community to be under the highest obligations; and I would here say that I would, with perfect confidence and satisfaction, entrust the employment of the expected workmen, with the application of any expenditure which may be sanctioned by the Government, and the guidance of the further experiments to be now entered on, to their general superintendence. I would only on this point repeat my opinion, that experiments in the improvement of cultivation should be chiefly by instruction and assistance to a select number of native cultivators, instead of by any attempt to cultivate by Government agents, although a limited extent of Government cultivation may, perhaps, be found unavoidable with a view to the rearing of produce from foreign seeds, to which the Ryots may be unaccustomed, and the risk of which they may be unwilling to incur.

26. Upon the details of future operations, I would only here state, that I would be inclined to appropriate, if Mr. Blundell, on a reference which should at once be made to him, should recommend the measure, a portion of the American workmen or instructors to the Tenasserim provinces, and that I would extend the experiments beyond Bengal (where the peculiar cottons which, as has been seen, flourish best near the sea coast might continue to be tried,) to our more distant cotton provinces, as Bundelkund and the Dooab, where but little effort has yet been made by the Government to ameliorate the produce.

27. It is in my recollection that Mr. Blundell has, in some private communication, referred to the heavy and long-continued rains of the

Tenasserim coast as very prejudicial to the growth of cotton ; and I would wish that the opinion of competent persons should be taken at all the Presidencies, as to the effect of a regular alternation of dry and rainy seasons on the plant and its produce.

28. Reports should, of course, be furnished as soon as practicable from each Presidency of the success or failure of the machine for cleaning cotton, which has been invented by the East India Association of Glasgow, and has been before referred to in this Minute. Three of these machines are said to be coming to Bombay, two to Bengal and two to Madras.

29. Of the Honourable the Governor in Council of Bombay, I would specially request that he should submit a succinct report of the progress and result of the experiments established for the improvement of the cotton of that Presidency, since the beginning of 1836, to which my summary has traced the subject, and that he should particularly notice the following points:—

1st. The success of the measures adopted under Mr. Lush, or by any successor to him, in the Southern Mahratta country, for inducing the Ryots to sell to him cleanly-gathered cotton, and for the cultivation of the perennial or other kinds of cotton in his experimental farm at Segee Hulle in Darwar.

2nd. The reasons which may have led to scarcely any measures being apparently taken by private capitalists for the desired improvement in the mode of gathering the cotton in the Gujerat districts, in which, on due attention being paid to this point, a good merchantable produce for the English market might, with so much certainty, be expected.

3rd. The result to the latest period of the introduction of the foreign seeds into the Gujerat districts, whether the seeds obtained from plants raised in the first place from such foreign seeds, yield an equally good description of produce as the original seeds, and whether the application of the saw-gin to produce of such growth has any different effect from its application to the indigenous cotton.

4th. The result from the Egyptian seed introduced in 1836, and the value of the cleaning-machine sent from Egypt, for the purpose of separating the seed of cottons of a long staple.

5th. The state of the ports in Gujerat, as respects warehouses and quays, and the occasion which may exist for any aid in regard to such buildings on the part of the Government.

30. I conclude, that information on the prospects of an improved

cotton cultivation is generally diffused among the commercial communities of all the Presidencies. If there should be doubt on this point, it will deserve consideration* in what manner the Government can aid in spreading correct knowledge on the subject.

31. I will only add that, in order to save time, it will be convenient that I should transmit direct to Bombay a copy of the Court's dispatch and of these remarks, and I propose accordingly to adopt that course.

AUCKLAND.

* I have been happy to observe, from a Report of the Sixteenth Anniversary Meeting of the Royal Asiatic Society in London, that this subject has attracted the special notice of the Committee of Commerce and Agriculture of that body. "The first article (it was stated) to which attention had been directed, was cotton." And after alluding to the details which had been collected and arranged on the subject,—
 "The Committee looked forward to a time, when they should be able to place within the reach of the practical agriculturist such information as would enable him to grow cotton in India equal to that of any part of the world."

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APPENDIX

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