

Manjayarao Gadgil Library



IIPE-PUNE-016095

1

EAST INDIA (COTTON).

RETURN to an Order of the Honourable The House of Commons,
dated 24 August 1857;—for,

A SELECTION “of PAPERS showing the Measures taken since 1847 to
promote the CULTIVATION of COTTON in INDIA.”

East India House, }
24 August 1857. }

J. C. MELVILL.

(*Mr. Seymour.*)

PART I.

BENGAL AND NORTH WESTERN PROVINCES.

Ordered, by The House of Commons, to be Printed,
24 August 1857.

CONTENTS AND INDEX.

BENGAL AND NORTH WESTERN PROVINCES.

CULTIVATION IN, AND CAPABILITIES OF THESE PROVINCES FOR THE PRODUCTION OF COTTON.*

	PAGE
Court of Directors to India Government, calling for information, 10 Nov. (No. 14) 1847 -	1
From H. H. Bell, Esq., Agra - - - - -	2
R. N. C. Hamilton, Esq. Indore - - - - -	4
Lieut.-Col. Sleeman, Saugor and Nerbudda Territory - - - - -	14
Captain G. W. Hamilton, Deputy Commissioner, Saugor - - - - -	15
E. K. Elliot, Esq Deputy Commissioner, Nursingpore - - - - -	16
Lieut. A. H. Ternan, Deputy Commissioner, Baitool - - - - -	18
Major J. Macadam, Deputy Commissioner, Jubulpore - - - - -	18
Captain D. Ross, Superintendent, Jaloun - - - - -	19
Ditto - - - - - Gwalior Ceded District - - - - -	20
Colonel J. Low, Resident at Hyderabad - - - - -	
Translation of Answer of Nizam's Minister - - - - -	
Captain Meadows Taylor, Shorapore - - - - -	
Captain Dorin, Bera - - - - -	
Captain Fenwick of Nizam's Pension Establishment - - - - -	
Pestonjee Viccajee - - - - -	
Lieut.-Col. Sleeman, Agent Governor-General, Jhansie - - - - -	
Captain H. Wakeman, Seonee - - - - -	
Sudder Board of Revenue, North Western Provinces - - - - -	
General Abstract prepared by the Sudder Board of Revenue - - - - -	
Sir T. Metcalfe, Commissioner, Delhi - - - - -	
Captain E. J. Robinson, Superintendent, Bhuttee Territory - - - - -	
N. H. E. Prowett, Esq., Paneeput - - - - -	
C. Mackenzie, Esq., Hissar - - - - -	
A. A. Roberts, Esq., Delhi - - - - -	
E. T. Colvin, Esq., Rohtuk - - - - -	
W. De H. Routh, Esq., Goorgaon - - - - -	
General Abstract, Delhi Commissionership - - - - -	
Statement of Price and Supply, Goorgaon - - - - -	
A. Ross, Esq., Superintendent, Deyrah Dhoon - - - - -	
F. B. Davidson, Esq., Scharunpore - - - - -	
H. W. Deane, Esq., Moozuffurnuggur - - - - -	
C. Gubbins, Esq., Meerut - - - - -	
A. W. C. Plowden, Esq., Boolundshuhur - - - - -	
G. Blunt, Esq, Allyghur - - - - -	
G. T. Lushington, Esq., Kumaon - - - - -	
J. H. Batten, Esq., Kumaon - - - - -	
Captain A. H. Ramsay, Kumaon - - - - -	

* In classifying the Papers, subjects are, occasionally, unavoidably intermixed. References to the Pages of the Return will be more convenient than the Dates or Numbers of the Documents.

CULTIVATION IN, AND CAPABILITIES FOR COTTON—continued.		PAGE
From H. Pidecock, Esq., Commissioner, Rohilcund - - - - -		55
R. K. Dick, Esq., Bijnour - - - - -		58
J. C. Wilson, Esq., Moradabad - - - - -		60
C. W. Fagan, Esq., Budaon - - - - -		61
F. Williams, Esq., Bareilly - - - - -		61
F. P. Buller, Esq., Shahjehanpore - - - - -		64
W. H. Tyler, Esq., Commissioner, Agra - - - - -		64
Edward Thornton, Esq., Muttra - - - - -		65
C. C. Jackson, Esq., Agra - - - - -		65
C. Raikes, Esq., Furruckabad - - - - -		67
R. Thornton, Esq., Furruckabad - - - - -		67
H. Unwin, Esq., Mynpoory - - - - -		67
J. A. Craigie, Esq., Etawah - - - - -		68
General Abstract Statement, Agra Division - - - - -		70
R. Lowther, Esq., Commissioner, Allahabad - - - - -		71
R. Montgomery, Esq., Cawnpore - - - - -		71
J. G. Bruce, Esq., Cawnpore - - - - -		72
C. W. Kinloch, Esq., Futtehpoore - - - - -		74
J. J. W. Taunton, Esq., Humeerpore - - - - -		75
F. B. Pearson, Esq., Calpee - - - - -		78
M. P. Edgeworth, Esq., Banda - - - - -		80
E. T. Tyler, Esq., Allahabad - - - - -		82
E. A. Reade, Esq., Commissioner, Benares - - - - -		84
H. C. Tucker, Esq., Gorukhpore - - - - -		85
W. Cooke, Esq., Gorukhpore - - - - -		86
J. Muir, Esq., Azimghur - - - - -		88
M. C. Ommanney, Esq., Juanpore - - - - -		88
W. E. Money, Esq., Mirzapore - - - - -		89
D. F. Macleod, Esq., Benares - - - - -		90
P. C. French, Esq., Ghazeepore - - - - -		91
E. A. Reade, Esq., Goruckpore, 24 January 1843 - - - - -		92
M. Blount, Esq., Goruckpore, 1 May 1843 - - - - -		94
E. A. Reade, Esq., Goruckpore, 10 October 1844 - - - - -		96
M. Blount, Esq., Goruckpore, 1 October 1844 - - - - -		97
General Abstract Statement, Sudder Board of Revenue, North Western Provinces - - - - -		98
G. A. Bushby, Esq., Agent, Governor-General, Bundlecund - - - - -		100
Captain R. R. W. Ellis, Bundlecund States - - - - -		101
G. A. Bushby, Esq., Gwallior Agency - - - - -		102
Lieut.-Colonel Sir Richmond Shakespear, Scindiah's Territory - - - - -		103
Ditto - - - - - ditto - - - - -		105
Ditto - - - - - ditto - - - - -		106
Court of Directors to Governor of Bengal, 10 Nov. (9) 1847 - - - - -		107
Observations on Result of Experiments by Dr. Royle - - - - -		108
Sudder Board of Revenue, Lower Provinces - - - - -		113
J. Dunbar, Esq., Commissioner of Dacca - - - - -		114
Major F. Jenkins, Commissioner in Assam - - - - -		117
Captain C. S. Reynolds, Gawalpara - - - - -		118
A. Sconce, Esq., Chittagong - - - - -		120
General Abstract Statement, Sudder Board of Revenue, Lower Provinces - - - - -		122

EXPLANATIONS REGARDING THE ALLEGED UNPRODUCTIVENESS OF BUNDLECOND.

Letter to Commissioner of Allahabad, 4 March 1846 - - - - -	138
Commissioner of Allahabad in reply, 12 September 1846 - - - - -	139
Statement of Duty collected at Calpee, 1835-36 to 1845-46 - - - - -	140
Statement of Duty collected at Cawnpore, 1818-19 to 1830-31 - - - - -	141
Statement of extreme Prices of Cotton in Calpee Bazar monthly, 1835 to 1846 - - - - -	141
Memorandum by H. H. Bell, Esq., addressed to C. Allen, Esq., 8 October 1846 - - - - -	142
Statement of Market Price of Cotton in Mynpoory - - - - -	147
Minute by Hon. J. Thomason, Lieutenant-Governor, North Western Provinces - - - - -	147

	PAGE
ESTIMATE OF COTTON CULTIVATION IN THE NORTH WESTERN PROVINCES, PREPARED FOR THE GOVERNMENT OF BOMBAY	148
Extent of Land cultivated, and probable yearly yield	150
Extent of Cotton Cultivation	151
EXPENSES INCURRED IN PROMOTING EXPERIMENTS FOR THE IMPROVEMENT OF COTTON, ITS CULTIVATION AND PREPARATION FOR THE MARKET	152
Court of Directors to Government of India, 18 May (No. 3) 1847	152
Statements from Bengal—	
From the arrival of the American Planters to the 30th April 1847	153
For 1847-48	155
For 1848-49	156
For 1849-50	157
For 1850-51	159
For 1851-52	160
For 1852-53	164
Statement from North Western Provinces, from 1 May 1842 to 30 April 1847	161
PROCEEDINGS OF MR. PRICE ON THE EXPERIMENTAL CULTURE OF COTTON.	
IN THE DACCA DISTRICT:	
Mr. Price's Report for June 1846	166
" July "	167
" Aug. "	169
" Sept. "	170
Report of the Agri-Horticultural Society of Calcutta on six Samples of Cotton	171
Mr. Price's Report for Oct. 1846	173
" Nov. "	173
" Dec. "	175
" Jan. 1847	176
" Feb. "	177
" Mar. "	178
Applications and Arrangements for Seeds	179
Mr. Price's Report for April 1847	181
" May "	182
" June "	183
" July "	183
Government of Bengal to Court of Directors, on unsatisfactory Progress of Mr. Price, 27 September (No. 14) 1848	184
Abstract of Mr. Price's Proceedings, January 1846 to April 1847, prepared in the Office of the Secretary to the Government of Bengal	184
Expenses incurred by Mr. Price in 1846-47, prepared in the Office of the Accountant to the Government of Bengal	186
Mr. Price's Report for August 1847	187
" Sept. "	188
" Oct. "	190
" Nov. "	191
" Dec. "	192
" Jan. 1848	193
Government of Bengal to Court of Directors, 8 October (No. 17) 1848	193
Mr. Price's Report for February 1848	193
" March "	194
" April "	195
Board of Revenue on Mr. Price's Failure at Dacca, 15 February 1848	195
Expenses incurred on Dacca Experiment, to the end of December 1847	198
Orders for continuing the Experiment; but exclusively on Patna and Bourbon Cotton; provision of Seed	198
Mr. Price's Report, First Quarter of 1848-49	201
Application for Mr. Mather's Cotton Churkas	202

PROCEEDINGS OF MR. PRICE— <i>continued.</i>		PAGE
Mr. Price's Report for Second Quarter of 1848-49	- - - - -	203
" " Third " - "	- - - - -	205
" " Fourth " - "	- - - - -	206
" " First Quarter of 1849-50	- - - - -	207
Expenses of Dacca Experiment, to 1 May 1847	- - - - -	210
Statement of Packages sent to England, 21 October 1846	- - - - -	210
Expenses, - 1847-1848	- - - - -	210
Realisations, ditto	- - - - -	211
Expenses, - 1848-1849	- - - - -	211
Realisations, ditto	- - - - -	211
Mr. Price's Report for Second Quarter, 1849-50	- - - - -	211
Abandonment of Experiment at Dacca, from 1 May 1850	- - - - -	212
Mr. Price's Report for Third Quarter, 1849-50	- - - - -	214

IN ASSAM :

Correspondence and Arrangements for an Experiment in this Province	- - - - -	214
Selection of a Locality ; Proceedings in Muttuck	- - - - -	218
Governor of Bengal to Court of Directors, 1 November (No. 19) 1851, and Enclosures	- - - - -	218
Failure in Muttuck ; proposed Abandonment of the Experiment	- - - - -	234
Governor of Bengal to Court of Directors, 27th August (No. 13) 1852	- - - - -	234

IN PEGU :

Extension of the Experiment to Pegu ; Examination of the Soils, and Cotton Lands	- - - - -	247
Government of India to Court of Directors (Foreign Department), 4 August (No. 67) 1854	- - - - -	247
Mr. Price's Report, dated Henzada, 12 May 1854	- - - - -	247
" " " " 5 June	- - - - -	249
Minute of Lord Dalhousie, concurred in by Colonel Low, 2 July 1854	- - - - -	250
Minute of Mr. Dorin, concurred in by Mr. Grant and Mr. Peacock : Objections to a Lower Rate of Assessment for Cotton Lands, 5 July 1854	- - - - -	250
Government of Bengal to Court of Directors : Have sanctioned the Reduction of the Assessment of Cotton Lands (Foreign Department), 16 March (No. 20) 1855	- - - - -	251
Mr. Price's Services dispensed with	- - - - -	253

FURTHER PROCEEDINGS IN PEGU.

Experiments in Pegu after Mr. Price's removal	- - - - -	253
Distribution of Cotton Seed in Pegu, and Results	- - - - -	253
Memorandum by Major Phayre, on indigenous Cottons of Pegu	- - - - -	254
Reports on Samples of Cotton sent to Chamber of Commerce	- - - - -	257
Efforts to raise Cotton from Sea Island Seed furnished by Mr. W. Blundell ; and also from Pernambuco Seed	- - - - -	222

EXPERIMENT OF MR. H. H. BELL, OF AGRA, TO ENCOURAGE THE CULTIVATION OF SUPERIOR INDIGENOUS COTTONS, PARTICULARLY THE BAUGCHEENEE ; AND TO SEND CLEANER COTTON TO THE HOME MARKET.

Government of India to Court of Directors, 20 October (No. 13) 1847	- - - - -	262
Mr. Tetley's Report on Specimens from Agra, dated 21 September 1847	- - - - -	264
Court of Directors to Government of India, 21 March (No. 2) 1848	- - - - -	264
Report of Valuation of Cotton per "Surat"	- - - - -	265
" Mr. Bazley, Chairman of Chamber of Commerce, Manchester	- - - - -	265
" Mr. J. A. Turner, Chairman of Commercial Association, Manchester	- - - - -	265
" on Cotton per "Monarch" and "Amwell;" Messrs. Tetley and Son	- - - - -	266
Court of Directors to Government of India, 19 July (No. 6) 1848	- - - - -	266
Account Sales of Cotton per "Amwell"	- - - - -	267
" " " " "Monarch"	- - - - -	268
Report on two Bales of Cotton per "Ellenborough;"* Messrs. Tetley & Son	- - - - -	269

* This Cotton was from Dacca ; specimens sent by Mr. Price. See Memorandum with Mr. Commissioner Dunbar's Letter at page 170 of this Return.

EXPERIMENT OF MR. H. H. BELL—continued.	PAGE
Court of Directors to Government of India, 27 June (No. 4) 1849 - - - - -	269
Court of Directors to Government of India, 13 April (No. 2) 1852, with 200 Copies of Dr. Royle's Work on Cotton - - - - -	270
Extract Agra Narrative, 12 May (No. 2) 1847 - - - - -	270
Government of India to Court of Directors, 1 July (No. 9) 1847 - - - - -	272
H. H. Bell, Esq., to Secretary to Government, North Western Provinces, 26 March 1847	272
Ditto - Assistant Secretary - - - - ditto - - - - 11 June 1847	278
Accounts of the Experimental Investment in June and July 1847 - - - - -	279
Statement of Cotton purchased - - - - -	281
Specific Appropriation of Invoices - - - - -	282
Cotton grown and purchased, and disposal - - - - -	283
Detail of Charges incurred in Cleaning, Packing, &c. - - - - -	284
Abstract of Cost, to Calcutta, of 1,625 Bales - - - - -	287
Government of India to Court of Directors, 18 Dec. (No. 20) 1847 - - - - -	288
" " " 31 Dec. (No. 22) 1847 - - - - -	289
" " " 5 Feb. (No. 1) 1848 - - - - -	292
Memorandum of Mr. H. H. Bell on Ten Varieties of Cotton, with Samples - - - - -	293
Government of India to Court of Directors, 18 March (No. 4) 1848: Details regarding Consignments per "Surat" and "Guisachen" - - - - -	295
Account Current, Honourable Company, with H. H. Bell, 31 Jan. 1848 - - - - -	300
Memorandum of Charges on Cotton, per "Surat" and "Guisachen," - - - - -	301
Note of Claims by Hurloll Sait - - - - -	302
H. H. Bell, Esq., in Account Current with Messrs. Mackillop, Stewart, & Co, 4 Dec. 1847,	302
Statement from Messrs. Mackillop, Stewart & Co. - - - - -	303
Invoice of 845 Bales per "Surat" - - - - -	303
" 813 whole and 5 half bales per "Guisachen" - - - - -	304
Government of India to Court of Directors, 25 March (No. 6) 1848 - - - - -	305
Memorandum of First Experiment, from Mr. Bell - - - - -	306
Government of India to Court of Directors, 30 Sept. (No. 20) 1848: Discontinuance of Advances to Mr. Bell - - - - -	307
Secretary to Government North Western Provinces (Duties in Native States), 31 March 1848,	307
" " " (Review of Experiments), 19 May 1848,	311
H. H. Bell, Esq., Summary of his Proceedings, 27 April 1848 - - - - -	312
Reports on Invoices and Samples, Messrs. N. Duckworth & Co., 6 Feb. 1846 - - - - -	317
Ditto - - - - Ditto - - - - 6 May 1846 - - - - -	317
Ditto - - - - Messrs. Tetley to Dr. Royle, 24 July 1847 - - - - -	317
Ditto - - - - Liverpool, 10 June 1847 - - - - -	318
Ditto - - - - S. G. Rathbone, Esq. - - - - -	318
H. H. Bell, Esq., to Messrs. Rathbone Brothers & Co. - - - - -	318
Rathbone Brothers & Co., to H. H. Bell, Esq.: Report on Cotton per "Surat,"	319
Ditto - - - to - - - ditto - - - - - 19 February 1848,	319
Ditto - - - to - - - ditto - - - - - 23 February 1848,	319
Report on Cotton per "Guisachen,"	320
Ditto - - - to - - - J. C. Melvill, Esq., Report on Cotton per "Surat,"	321
29 February 1848,	321
Report of Mr. J. A. Turner on Cotton from Mr. Bell, 2 March 1848 - - - - -	322
Report of Mr. Bazley on Cotton from Mr. Bell, 1 March 1848 - - - - -	322
Messrs. Rathbone Brothers to J. C. Melvill, Esq.: Valuation of the above - - - - -	322
H. H. Bell, Esq., to Secretary to Government, Agra (Proposal for closing the Experi- ments), 1 May 1848 - - - - -	323
Extract Agra Narrative (Extension of Time of Payment by Mr. Bell), 26 December (No. 4) 1849 - - - - -	325
Extract Agra Narrative (Adjustment of Accounts, 1847-48), 20 October (No. 3) 1851 - - - - -	328
Account of Cotton Experiment under C. Allen, Esq., C. S. as made over to Mr. Bell, 4 November 1850 - - - - -	334
Disbursements, August 1848 to October 1850, dated 4 November 1850 - - - - -	335
Realisation of Plant Balances, and Statement of Arrears, 31 October 1850 - - - - -	335

	PAGE
EXPERIMENT OF MR. H. H. BELL—continued.	
Return of Stores to Agra Magazine - - - - -	336
Account Sales of 102 Bales of Cotton per "Palestine" - - - - -	336
Memorandum of Account, with Accountant's Remarks, dated 31 March 1851 - - - - -	337
Proceedings after the death of Mr. Bell - - - - -	339
EMPLOYMENT OF DR. SILL IN THE JULLUNDUR DOAB, TO ASCERTAIN ITS CAPABILITIES FOR COTTON.	
Governor-General Lord Hardinge, to Court of Directors, 14 August 1847 - - - - -	346
Report of J. Lawrence, Esq., Commissioner and Superintendent, Trans-Sutlej States, 19 March 1847 - - - - -	347
Notes of Information from J. Lawrence, Esq. - - - - -	351
Statement, showing cost of an Acre of Cotton Cultivation in the Delhi and Jullundur Districts - - - - -	354
H. Vansittart, Esq., Deputy Commissioner, Jullundur, 21 December 1848 - - - - -	355
H. Sill, Esq. to J. Lawrence, Esq., Report, 27 January 1847 - - - - -	356
Robert Cust, Esq. to J. Lawrence, Esq., Hoshiarpore, 9 February 1847 - - - - -	358
Report from Messrs. J. R. Tetley & Sons on Jullundur Cotton - - - - -	360
INCORRECTNESS OF THE IMPRESSION THAT CONSIDERABLE QUANTITIES OF COTTON WOOL ARE TRANSPORTED THROUGH NEPAUL INTO THIBET - - - - -	
	360
EXPERIMENTS ON MEXICAN SEED FROM COIMBATORE, BY MR. J. G. BRUCE AT CAWNPORE - - - - -	
	361
EFFORTS IN THE SIKKIM MORUNG ; DARJEELING - - - - -	
	363
ENCOURAGEMENT ACCORDED TO MR. J. MATHER, THE INVENTOR OF IMPROVEMENTS ON THE NATIVE CHURKA.	
Government of India to Court of Directors, 21 October (No. 56) 1848 - - - - -	367
Report of F. W. Simms, Esq., on the Machine, 10 January 1848 - - - - -	368
Report of Mr. Munro, Carding Master, and Mr. A. Morrison, Spinning Master, Fort Glo'ster, 9 February 1848 - - - - -	369
Further Report of F. W. Simms, Esq., suggesting Alterations, 7 August 1848 - - - - -	371
Contingent Bill of Mr. Mather - - - - -	376
J. H. Mather, Esq., Secretary, Government of India (Application in consequence of success), 23 September 1848 - - - - -	379
Minute of Lord Dalhousie, 10 October 1848 - - - - -	381
Secretary Government of India to H. Mather, Esq. (Employment to construct Machines), 21 October 1848 - - - - -	381
Measures for construction of the Machines, and their distribution - - - - -	382
Memorandum by Mr. Mather: Directions for setting-up - - - - -	389
Report on Mr. Mather's Churkas by H. H. Bell, Esq., Agra - - - - -	399
Report on Mr. Mather's Churkas by Captain Oldfield, Agra - - - - -	402
F. W. Simms, Esq., to Under Secretary to Government of India, 20 September 1849: Observations on the above Reports from Agra - - - - -	404
J. Fraser, Esq., Assistant Civil Engineer: Report on Mr. Mather's Proceedings - - - - -	405
J. H. Mather, Esq., to F. W. Simms, Esq.: Reply to Agra Reports, 19 September 1846 - - - - -	406
Mr. Bell's Statements and Mr. Mather's Remarks - - - - -	408
Extract, J. H. Mather, Esq., to H. H. Bell, Esq., 30 March 1849 - - - - -	411
Mr. Allen's Statement of Proceedings of Committee at Agra - - - - -	412
Memorandum of Mr. Mather's proposed Alterations, and Description of a Cotton Thresher, 25 August 1847 - - - - -	414
Completion and Distribution of 96 Churkas - - - - -	416
Facilities afforded to Mr. Mather at the Iron Bridge Yard - - - - -	416
Use of 12 Machines granted to Mr. Mather for trial - - - - -	432
Mr. Mather's Instructions for setting up the Machines - - - - -	436
Disposal of the residue of Mr. Mather's Machines - - - - -	437
Failure of the Machines at Bombay - - - - -	439
Extract of Memorandum by Revenue Secretary, Bombay - - - - -	440
Note by A. R. Young, Esq., Under Secretary to Government of India, 26 October 1853 - - - - -	442

	PAGE
PROCEEDINGS REGARDING OFFERS OF PRIZES FOR THE BEST COTTON-CLEANING MACHINERY, AT THE INSTANCE OF THE AGRICULTURAL SOCIETY OF CALCUTTA - - - - -	447
Extract, Government of India to Court of Directors, 13 April (No. 17) 1850 - - - - -	447
Original Proposition of the Society to Government, 15 August 1849 - - - - -	447
Report of Committee for proposing the Prize, 24 June 1849 - - - - -	448
Offer of 5,000 Rupees by Government, 1 September 1849 - - - - -	449
Advertisement - - - - -	451
Government of India to Court of Directors, 27 September (No. 65) 1853 - - - - -	452
Result of Competition for the Prize - - - - -	452
Report of Special Committee, 17 June 1852 - - - - -	454
Table of Experiments - - - - -	457
DISTRIBUTION OF "COTTAGE SAW GINS" SENT OUT BY THE COURT OF DIRECTORS AT THE RECOMMENDATION OF THE MANCHESTER COMMERCIAL ASSOCIATION.	
Court of Directors to Government of India, 27 June (No. 5) 1849 - - - - -	461
Vice-President, Manchester Commercial Association, to Chairman, Court of Directors - - - - -	461
Dr. Royle's Report on Trial of the Cottage-gins - - - - -	462
Reports of Manufacturers on the working of the Cotton ginned by the Saw Gins - - - - -	465
Report of Mr. Petrie - - - - -	466
Purchase and despatch of the Gins to India - - - - -	468
Memorandum of Mr. Petrie for setting them up and working them - - - - -	469
Conflicting Reports of Mr. Bell, of Agra, and Mr. Price, of Dacca, on trials of them - - - - -	470
LETTER OF MR. ROBERT BUEN REGARDING HIS ROLLER-GIN - - - - -	474

East India House, }
24 August 1857. }

J. MILL,
Examiner of India Correspondence.

SELECTION of PAPERS showing the Measures taken since 1847 to promote
the CULTIVATION of COTTON in INDIA.

— I: —

BENGAL AND NORTH WESTERN PROVINCES.

I.
Bengal and
North Western
Provinces.

Revenue Department, 10 November (No. 14) 1847.

Our Governor-General of India in Council.

Para. 1. We are desirous of procuring information as to the extent to which Cotton. India might be capable of supplying cotton, in the event of an increased demand for it, either in this country or elsewhere; and we have accordingly framed the queries in the margin,* which we wish you to forward to the Lieutenant-Governor of the North-Western Provinces for circulation among the collectors of land revenue, and the political agents resident in such native states as are known to produce cotton, with instructions to furnish concise replies on the several points indicated.

2. We have forwarded communications to the same effect to the Governments of Bengal, Fort St. George, and Bombay.

We are, &c.
(signed) *H. St. G. Tucker,*
J. L. Lushington,
&c. &c.

London, 10 November 1847.

Fort William, Home Department, Revenue, 15 January 1848.

Resolution.—Read a despatch from the Honourable the Court of Directors, No. 14, dated 10th November 1847, forwarding queries, with the view of obtaining information as to the extent to which India might be capable of supplying cotton in the event of an increased demand for it in England.

Ordered, That a copy of the above despatch be transmitted to the Foreign Department, for such orders as may be necessary in that department, with a suggestion that copies of the queries may be communicated to the Resident at Hyderabad, for replies, as regards Oomraotee and other marts in the Nizam's country; and that a reference be also made to the Superintendent of the Jul-lender Doab, for information as regards that territory.

- * 1. What is the price of cotton, freed from seed, at the principal mart or marts in your district?
2. At what price does the ryot sell his cotton, cleaned or uncleaned; and with or without advances?
3. What is the expense of cleaning cotton by the churka or foot-roller, or by any other method which may be in use?
4. What are the expenses of conveying cotton to the nearest port for shipment?
5. What is the average produce of cotton per beega or acre?
6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried, in the event of an increased demand?

N.B.—The beega, maund, and rupee used in answering these questions must be defined.

PAPERS RELATING TO MEASURES TAKEN SINCE 1847

I.
Bengal and
North Western
Provinces.

(No. 75.)

From *G. A. Bushby*, Esq., Secretary to the Government of India, Home Department, to the Secretary to the Government of the North Western Provinces.

Home Department.

Sir,
I AM directed by the Governor-General in Council to transmit to you the accompanying copy of a despatch from the Honourable the Court of Directors, No. 14, dated 10th November last, and to request that the Honourable the Lieutenant-Governor will cause to be obtained and furnished to the Government of India the replies of the proper officers to the queries framed by the Honourable Court, in regard to the extent to which India might be capable of supplying cotton, in the event of an increased demand for it, either in England or elsewhere.

I have, &c.
(signed) *G. A. Bushby*,
Secy. to Govt. of India.

Fort William, 15 January 1848.

(No. 896 of 1848.)

From *J. Thornton*, Esq., Secretary to the Government of the North-Western Provinces, to *G. A. Bushby*, Esq., Secretary to the Government of India, Home Department, Fort William.

Revenue Department.

Sir,
IN reply to your letter of the 15th January last, No. 75, regarding the extent to which India may be capable of supplying cotton, in the event of an increased demand for it either in England or elsewhere, I am directed by the Honourable the Lieutenant-Governor to transmit copy of a letter from Mr. H. H. Bell on the subject, and to state that attempts have been made to obtain information in other quarters; but that it is not expected that replies will be furnished of a more trustworthy or complete character than the accompanying.

I have, &c.
(signed) *J. Thornton*,
Secy. to the Govt. N. W. P.

Agra, 6 March 1848.

(No. 1 in No. 896, of 1848.)

From *H. Hamilton Bell*, Esq., Agra, to *J. Thornton*, Esq., Secretary to Government, North Western Provinces, Agra.

Sir,
I HAVE the honour to acknowledge the receipt of your letter, No. 530, of 1848, of the 12th instant, enclosing a note of certain queries connected with the production of cotton in India, to which the Honourable the Court of Directors desire a reply.

Query 1st. What is the price of cotton, freed from seed, at the principal mart or marts in your district?

At Agra this year, the prices have varied from 9 rupees to *Rs. 7. 8.* per Company's maund of 80 rupees to the seer. The bazar usage, however, has established the practice of weighing from 42 to 44 seers for a maund, instead of 40 seers, the higher rate being submitted to by the seller in a dull market, the lower insisted on as the extreme allowance when the demand is active. These rates must generally be taken as the price of the produce of the vicinity, that is of Agra, and contiguous zillahs, for the importations of this season from the independent or protected states to the south-westward are scarcely commenced, and will be very limited.

It may be remarked that the opening prices are generally of a speculative character, and this season they were high from a persuasion the crop would prove short, as has been the case; but this has been since then met by the depressed state of trade, and gradually the price has receded to *Rs. 7. 8.* to *Rs. 7. 10.* in the great bazars. The prices, when the cotton comes to market, almost entirely depend on the advice from Mirzapore, the great cotton mart of the country.

The

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 3

The prices quoted chiefly refer to the districts near Agra; as yet but little cotton has arrived from the states to the south-west, and it is understood the supplies thence will, this season, be very limited, partly, it is stated, from short crops, and partly, as is said, from the trade having taken another direction towards Bombay, and also through Bekaneer and Jesulmeer to Roree Bhukkur on the Indus.

I.
Bengal and
North Western
Provinces.

2d. At what price does the ryot sell his cotton, cleaned or uncleaned, and with or without advances?

The price at which the ryot sells his cotton is entirely governed by the principles above noticed, when the speculative prices of the approaching crop are determined; about September the village bunnahs contract with the cultivators for their growing crops, at something not very materially lower for early deliveries, and this invariably under advances, sometimes of the whole amount of the engagement, according to the price agreed upon; subsequently the ruling prices in the great bazars determine the village rates; the local dealers being the purchasers by private bargains, or in the village market. In the districts near Agra, cotton is almost invariably sold freed from seed.

3d. What is the expense of cleaning cotton by the churka or foot-roller, or by any other method which may be in use?

The charge of seeding cotton by the churka, the only mode in use here, may be stated as about 12 annas per maund; less would hardly be fairly remunerative for labour, as it is rather active work to turn out five seers per day. In the Company's cotton experiment here, although there are some men who manage to do eight seers per diem, the average can hardly be taken above four seers. In some cases the seed is given in payment, but not where this is in considerable consumption and readily sold, the use for feeding cattle being nearly confined to the cold season; assuming 100 maunds of *kupas* to yield, of clean cotton, 30 maunds, there would remain of seed, 70 maunds, which at 55 seers per rupee, the present selling price in the bazar would realise Rs. 50. 14. 9., whereas, seeding 30 maunds of cotton at 12 annas per maund would cost Rs. 22. 8., or not more than two-fifths. It is only, however, in the neighbouring large cities that seed is saleable in quantity, the expense of carriage being a bar to its transport to a distance.

4th. What are the expenses of conveying cotton to the nearest port for shipment?

From Agra cotton is rarely sent below Mirzapore for a market, and I believe never below Ghazeepore and Patna by the native merchant. Generally, their business is conducted at less charge than by Europeans, and the conveyance from hence to a port of shipment, Calcutta, can hardly be assumed higher than the rate paid in the Government cotton experiment in these provinces. In 1847, this was Co.'s Rs. 2. 4. per bale of 300 lbs., and with petty charges equivalent to Rs. 0. 10. 4. per Company's maund. If the terms "expenses of conveying" are intended to comprise insurance, 4½ per cent. on the invoice must be added.

5th. What is the average produce of cotton per beega or acre?

It is extremely difficult to state the produce per beega, but perhaps 1½ Company's maund per beega of one-fifth of an acre may be assumed as a fair average under good culture; two maunds per beega would, however, be only a moderate return here, in my opinion, under careful management. The cultivation, when within walled enclosures, has yielded more than this in my experiments, whilst in *khates** much superior in appearance, at least not having the same protection, the return has been much less. There is no cultivation so exposed to be pilfered unremarked, and none which is so much the object of plunder. I conceive 600 lbs. of unseeded cotton per acre not at all an extravagant average.

6th. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried, in the event of an increased demand?

In the districts with which I am acquainted in the vicinity of Agra, the cultivation is assumed to be one-fourth of the khureef crop. I imagine the inability of the ryots to weed the crop is the only impediment to increased cultivation, and its extension seems to me to be dependent on this alone, provided the prices are remunerating. This, however, is a complete bar generally, for unless the cotton has been well weeded once or twice before the rains fairly set in, a complete failure is expected, and my own experience fully bears out this opinion. This difficulty is of a character to be overcome, and apparently might be by sowing the cotton in drills and weeding by a hoe, drawn by a bullock or tattoo, as will be determined by experiment the ensuing season. We may, I believe, assume 7½ Co.'s rupees per Company's maund to pay the ryot, although scarcely more, and certainly not sufficiently so to render it a preferential cultivation; still, as it is generally the source from which the ryot

* Fields.

4 PAPERS RELATING TO MEASURES TAKEN SINCE 1847

I.
Bengal and
North Western
Provinces.

ryot anticipates his means for payment of his khurreef kists, it will be steadily maintained under common circumstances.

I believe these remarks embrace all the points noticed in the queries of the Honourable the Court of Directors.

I have, &c.
(signed) *H. Hamilton Bell.*

(True copy.)
(signed) *J. Thornton,*
Secretary to the Government, North Western Provinces.

Home Department, Revenue.—No. 13 of 1848.

To the Honourable the Court of Directors of the East India Company.

Honourable Sirs,

In continuation of our despatch, No. 5, of 1848, dated the 25th March, we have the honour to transmit the accompanying letter from the Resident at Indore, communicating information regarding the culture of cotton in Malwa.

We have, &c.
(signed) *Dalhousie.*
F. Millett.
J. H. Littler.

Fort William,
4 July 1848.

(No. 1468 of 1845.)

EXTRACT from the Proceedings of the Right Honourable the Governor General of India in Council, in the Foreign Department, under date the 17th June 1848.

Read a letter and enclosure from the Resident at Indore, No. 37, dated 18th April, submitting information regarding the culture of cotton in Malwa.

Order.

Ordered, That a copy of the foregoing be transmitted to the Home Department with reference to the Extract from that Department, dated the 15th January last, No. 20.

(True Extract.)
(signed) *P. Melvill,*
Under Secretary to the Government of India.

(No. 37 of 1848.)

From *R. N. C. Hamilton*, Esq., Resident at Indore, to *H. M. Elliot*, Esq., Secretary to the Government of India.

Sir,

General, No. 507.

I HAVE now the honour to forward for submission to the Right Honourable the Governor-General of India, information regarding the culture of cotton in Malwa, arranged in replies to the questions put by the Honourable Court of Directors.

2. I have endeavoured to condense in a tabular form the information collected from various quarters so as to show the statistics in each district of Malwa, Nimar, Bhopal, and other states within the circle of this Residency.

3. Having during my several annual tours occupied myself in ascertaining the extent and nature of the cotton trade, and of the species of cotton raised in Malwa, I believe the information now transmitted may be relied upon.

4. Opium during the last ten years has almost superseded cotton, still there has always been a good deal produced, and attention is again being turned to cotton in consequence of the

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 5

the fall in opium: but the difficulty the producer in Malwa has to overcome is not in the cultivation of the plant, but in exporting his cotton to a mart.

5. I was much struck last February to find when at Sutwass in Kantaphore, about 33 miles from Indore, in the upper valley of Nimar, on the right bank of the Nerbudda, a large quantity of cotton about to be sent to Mirzapore viâ Hoshungabad and Saugor; the cost of the cotton at Sutwass was 22 rupees per bojah of 4 Pucka maunds, and the cost of land carriage 11 rupees, so that at Mirzapore the cost of the cotton would be about 11 rupees the cwt., or 2 ½ d. per pound avoirdupois at Mirzapore.

6. The resources of India suitable for exportation can never be brought into a foreign market with a remunerating return until something is done to improve and accelerate the means of intercommunication.

7. It seems almost incredible, but it is a fact, that it actually takes a longer time to convey the cotton to a port than to rear the plant, yet the distance to be travelled in India for this purpose is now traversed in Europe in a few hours, the cotton-growing districts of Malwa not being 400 miles from the port of Bombay, and though two months would be consumed in accomplishing this distance, still Mirzapore on the Ganges is now resorted to, that mart being upwards of 400 miles distant, after which the cotton has to be conveyed by the river to Calcutta.

8. The central states between the Satpooa range, or between the Taptee and Delhi, or those of Nimar, Malwa, Marwar, Rajpootana, Jeypore, Kotah, Boondy and Bhopal, have no water carriage for their commerce; like the Doab, Rohilkund, Oude, or Benares provinces, they depend upon the slow marches of bullocks or of camels to convey their products, and from the expenses of transport, they are almost excluded from participating in the benefits of commerce.

9. Surely then these are the districts towards which the science, the ingenuity, the skill and capital of Britain, should be turned, not only as most likely to improve the social and commercial condition of the people, but also as most likely, from the absence of competition, to yield a fair return on the outlay.

10. That which the British Government should undertake, and which the native states on the line would if required aid with their contributions, is one main line or trunk railway from Bombay to Delhi. Our Government must take the initiative, the works should be placed under English superintendence, not suffered to risk the trials, vexatious and disgusting jobbery of unscrupulous committees, to whose management no native merchant in the interior will ever now entrust a fraction, and whose reputation, I say in sorrow, is one of the most painful and distressing in remote parts, where once the word of a British merchant was accepted unquestioned and sacredly regarded.

11. It is only the Government and its guarantee that can be expected to draw native chiefs and monied men in the interior into associations for the promotion of public works; and I would strongly urge upon the consideration of his Lordship in Council the desirability of framing some scheme for the part of the vast empire to which I have alluded, by which the benefit of rapid intercommunication might be extended, with its train of social, commercial and political advantages, in which the Government, the chiefs, and individuals might be combined, and the works carried on by able and experienced Europeans under the countenance and protection of the Government local functionaries.

Indore Residency, }
18 April 1848. }

I have, &c.
(signed) R. N. C. Hamilton,
Resident.

I,
Bengal and
North Western
Provinces.

REPLIES to the QUESTIONS put by the Honourable Court of Directors.

NAMES of DISTRICTS.	1. What was the price of cotton, freed from seed, in your district last year at this season, and what is it now?	2. At what rate do the ryots and cultivators sell cotton freed from seed, if paid in advance, and what if not paid in advance?	3. What are the expenses of separating the seed from the cotton by (churkee) distaff, or any other machine used in this country?
Indore Proper -	It was 7 seers per rupee last year, and now sells at 15 seers.	The husbandman does not separate cotton from seed, and with seed it is sold at 16 seers per maunee; if an advance be taken, it sells a quarter less, <i>i.e.</i> 12 rupees per maunee.	Churkee is the only machine; expense, 4 rupees per maunee.
Samaire -	6 seers per rupee last year, 5 seers per rupee now.	At 16 seers per maunee, not cleaned of seed; no advance is made.	Churkee the only machine; expense, <i>Rs.</i> 2. 4.
Mahidpore -	27 rupees per maunee last year, 42 rupees this year.	At 39 to 42 rupees per maunee this year, 2 rupees less if paid in advance.	Churkee the only machine; expense, 2 rupees per maunee.
Rampoora -	4½ seers per rupee at Rampoora, 1½ per rupee at Munassa.	No advance is ever made in this district; cotton, with seed, 21½ rupees per maunee without its seed.	Churkee the only machine; <i>Rs.</i> 3. 8. per maunee, the expense of separating seed.
Mulharghur -	3½ rupees per Kutcha maund last year, 4 Salim Shae rupees now.	19 rupees per maunee; no advance made.	Churkee the only machine; expense, 3 annas per maund Kutcha.
Sunjeit -	3 Kutcha rupees per maund last year, 3½ this year.	14 Kutcha rupees per maund; no advance made.	Churkee the only machine; expense, 2 annas per maund Kutcha.
*Burrowda -	<i>Rs.</i> 2. 12. per maund last year, 3½ this year.	With seed, on advance, 17 rupees; without seed, 19 rupees per maunee.	Churkee the only machine; expense, 4 annas per Kutcha maund.
Jourah -	<i>Rs.</i> 3. 4. per maund last year, 4 rupees this year.	On advance 18 rupees, otherwise 20 rupees per maunee.	Churkee the only machine; expense, 4 annas per maund.

REPLIES to the QUESTIONS put by the Honourable Court of Directors.

4. What are the expenses of transporting cotton from your district to Bombay, Surat, Tunkaria Bunder, Mirzapore, or any other market, and to what port or market is it sent the most?	5. How much is the average produce of cotton in a beegah?	6. How much land in your district is under cotton cultivation, and to what extent could it be increased?	7. What is the measure, currency, the weight of seer, maund and maunee in your district?
<p>It goes from Indore to Mirzapore, and not elsewhere; a cart carrying 5 bojas is hired for 55 rupees, and 5 rupees of duty must be added.</p>	<p>In the best land a maunee, and in bad 6 maunds, one produce.</p>	<p>5,000 beegahs are under cotton cultivation, and 1,000 more could be added.</p>	<p>110 cubits square make a beegah; a seer 82 Halee rupees; a Kutcha maund is 20 seers; 12 Kutcha or 6 Puckah maunds make a maunee; the currency is Halee rupees; a bojah is 4 Pucka maunds, about 3 cwt.; the Hal and Co.'s rupees are nearly par.</p>
<p>Very little cultivated, and often brought from Indore for use; sent nowhere.</p>	<p>2 Kutcha maunds produce of one beegah.</p>	<p>Only 200 or 300 beegahs are now under cotton, but it could be extensively increased.</p>	<p>The seer 80 Halee rupees; 1 Kutcha maund 20, and Pucka 40 seers; 12 Kutcha or 6 Pucka maunds a maunee; bojah 4 Pucka maunds; Halee currency.</p>
<p>It is transported from Mahidpore to Kalpie, or Mirzapore, at the additional cost of 2½ rupees per maund. In transporting it to Tunkaria Bunder, Surat or Baroch, Rs. 1. 4. per maund would be the expense; but here the experiment has never been tried. From Rutlam, Kochrode and Burnuggur, it is often sent to those ports.</p>	<p>6 maunds, of 18 seers each, in a beegah, including seed; cleared of seed it remains 1½ maund; the worst produce is 4 maunds, which gives 1 maund of cotton without seed.</p>	<p>About 10,000 to 12,000 beegahs are now sown with cotton, about 2,000 more could be added; it is capable of still further increase, as it can grow in the Jowar, Moong and Thoor fields.</p>	<p>5½ square cubits make a biswahsee; 5½ cubits wide and 105 long make a biswah; 20 square biswahs make a beegah; a seer 80 Halee rupees; a maund 18 seers, and 12 maunds of this weight is a maunee; the currency is Oojein or Indore rupees, known as Halee rupees.</p>
<p>This district does not send cotton anywhere.</p>	<p>Only a maund of cotton with seed is produced in a beegah.</p>	<p>Very little cotton is cultivated here; altogether about 30 or 40 beegahs; as much more could be added.</p>	<p>60 square yards is a beegah, a seer 96 Salim Shae rupees at Rampoora; 91 rupees at Maunassa; 20 seers a maund, 12 maunds a maunee; the currency is Salim Shae rupees, which is from 18 to 20 per cent. worse than Halee.</p>
<p>Very little produce brought in from Meywar for consumption.</p>	<p>6, 4, and 2 maunds per beegah is the produce.</p>	<p>1,000 beegahs under cultivation; more could be added.</p>	<p>60 yards square a beegah; 84 Salim Shae rupees a seer; 20 seers the Kutcha maund; 12 Kutcha or 6 Pucka maunds a maunee; Salim Shae rupees the currency.</p>
<p>Transported nowhere; very little, barely enough for internal consumption, is produced.</p>	<p>The average produce per beegah is 3 maunds.</p>	<p>200 beegahs under cultivation.</p>	<p>90 hands or cubits square is a beegah; 32 Salim Shae rupees a Kutcha seer; 12 Kutcha or 6 Pucka maunds a maunee; Salim Shae rupees the currency.</p>
<p>Transported to Baroach or Tunkaria Bunder alone, at an expense of Rs. 1. 5. per maund.</p>	<p>The average produce per beegah is 3 maunds.</p>	<p>From 300 to 400 beegahs under cultivation; could be increased.</p>	<p>100 square cubits make a beegah; 74 Salim Shae rupees a seer; 20 seers a Kutcha maund; 12 Kutcha or 6 Pucka maunds or 40 seers, each a maunee; Salim Shae rupees the currency.</p>
<p>Transported from Jowrah to Baroach and Tunkaria Bunder, at an expense of Rs. 1. 5. per maund.</p>	<p>3 maunds the average produce.</p>	<p>1,000 beegahs under cultivation; could be increased.</p>	<p>100 cubits square make a beegah; 84 Salim Shae rupees a seer; 20 seers the Kutcha maund; 6 Pucka or 12 Kutcha maunds the maunee; Salim Shae rupees the currency.</p>

REPLIES to the Questions put by the Honourable Court of Directors—*continued.*

NAMES of DISTRICTS.	1. What was the price of cotton, freed from seed, in your district last year at this season, and what is it now?	2. At what rate do the ryots and cultivators sell cotton freed from seed if paid in advance, and what if not paid in advance?	3. What are the expenses of separating the seed from the cotton by (churkee) distaff, or any other machine used in this country?
Tal Munda Mal	Rs. 3. 4. per maund last year, 4½ rupees this year.	No advance given; about 20 rupees per maunee.	Churkee the only machine; expense, Rs. 2. 12. per maunee.
Rutlam	Rs. 3. 8. per maund is the present rate of "sutta."	16 rupees per maunee, with seed; no advance in this dis- trict.	Churkee the only machine; Rs. 2. 6. the expense per mau- nee for separating the seed.
Kanwar Dhar	2 rupees per Kutchu maund last year, 3 rupees this year.	11 or 12 rupees per maunee; on advance, a rupee less.	Churkee the only machine; Rs. 2. 2. the expense per mau- nee for separating the seed.
Chiculda	16 rupees per beegah last year, and 16 rupees this year.	17 rupees a maunee; on ad- vance, a rupee less.	Churkee the only machine; Rs. 4. 4. the expense per mau- nee for separating the seed.
Kantaphore	16 rupees last year, 22 rupees this year.	17 rupees per maunee on ad- vance, or 20 rupees without advance.	Churkee the only machine; 4 rupees per maunee expense for separating the seed.
Sehore	Rs. 5. 12. per maund last year, Rs. 6. 8. this year.	Rs. 6. 8. per maund with- out seed; with seed Rs. 2. 8. per maund; on advance, Rs. 2. 4, per maund.	Churkee is the only machine, and the expense in separating seed, 5 annas per maund.
Bairseeah	6 rupees per maund last year, Rs. 8. 8. this year.	8 rupees per maund without seed; with seed Rs. 2. 8. per maund; on advances, still less.	As preceding
Seronj	6 seers per rupee last year, 4½ seers per rupee this year.	12 seers per rupee with seed; 4½ seers without seed; on ad- vances, the price is little less.	Churkee the only machine; R. 1. 8. per maunee is the ex- pense for separating seed; some- times the seed is taken in lieu of cash payment for wages.
Dhar	24 rupees per maunee last year, 36 rupees this year.	36 rupees per maunee; R. 1. 8. per maunee less if paid in advance.	Churkee is the only machine; expense of separating seed, 2 rupees per maund.

REPLIES to the Questions put by the Honourable Court of Directors—continued.

4. What are the expenses of transporting cotton from your district to Bombay, Surat, Tunkaria Bunder, Mirzapore or any other market, and to what port or market is it sent the most?	5. How much is the average produce of cotton in a beegah?	6. How much land in your district is under cotton cultivation, and to what extent could it be increased?	7. What is the measure, currency, the weight of seer, maund, and maunee in your district?
<p>Sent to Kochrode or Rutlam, alone.</p> <p>Sends cotton only to Baroach; a large bag of 16 maunds, or a small one of 9 maunds, costs 5 rupees and 3 rupees respectively for transport.</p> <p>Sends to no other market but Burnuggur and Rutlam.</p> <p>Transported to Baroach and Baroda at an expense of 1½ rupee per maund, i.e. 1 rupee hire for carriage and 8 annas as duty.</p> <p>Transported to Mirzapore only, at a cost of 55 rupees for 6 bojās, i.e. 50 rupees hire for carriage, and 5 rupees duty.</p> <p>Transported to Mirzapore, a bullock or buffalo carrying 3 Puckah maunds; cost Rs. 7. 8., besides 1 rupee duty.</p> <p>Transported to Mirzapore at an expense of 5 rupees per maund; i.e. 3 rupees duty, 2 rupees hire; it is also transported to Kalpee at the same rate.</p> <p>Sent nowhere, very little being produced.</p> <p>Nowhere transported, save to Rutlam and Indore; expense of transport cannot be accurately known.</p>	<p>2 to 6 maunds per beegah.</p> <p>2, 4 or 6 Kutcha maunds is the produce of a beegah.</p> <p>2, 4 or 6 Kutcha maunds is the produce of a beegah.</p> <p>A piece of land in which a maund of seed could be scattered, is called a beegah. Its growth depends on rain; no accurate estimate can be formed of the extent of cultivation.</p> <p>1½ maund is the average produce of a beegah.</p> <p>2 maunds 10 seers average.</p> <p>2 maunds is the average -</p> <p>3 to 4 maunds per beegah</p> <p>The best produce is 6 maunds per beegah, 4 maunds the next, and 2 maunds the third.</p>	<p>1,200 beegahs are undercultivation, more could be added, but the profit is not equal to the labour and expense.</p> <p>No proper estimate can be formed of the extent to which cotton is cultivated, but probably it may be 3,500 beegahs.</p> <p>60 beegahs are now under cultivation; could be increased to 125 beegahs.</p> <p>No extent can be accurately estimated.</p> <p>2,000 beegahs are now undercultivation, 1,000 more could be added.</p> <p>Not extensively cultivated now, but could be increased.</p> <p>5,000 beegahs are now under cultivation; 2,500 beegahs more could be added.</p> <p>Very little is sown -</p> <p>From 1,000 to 1,200 beegahs are under cultivation in the whole district of Dhar; could be increased from 1 to 200 beegahs more.</p>	<p>105 square cubits make a beegah; 82 Salim Shae rupees a seer; 20 seers to a Kutcha, and 40 to a Pucka maund; 6 Pucka or 12 Kutcha maunds is a maunee; Salim Shae rupees is the currency.</p> <p>41 Salim Shae rupees to a seer; 40 seers to a maund; 12 maunds to a maunee; Salim Shae rupees the currency.</p> <p>20 beegahs of 5 cubits each make a beegah; 80 Halee rupees a seer; 20 seers a Kutcha, and 40 seers to a Pucka maund; 12 Kutcha maunds to a maunee; 4 Pucka maunds to a bhoja; Halee rupees the currency.</p> <p>The beegah is not measured here; 80 rupees to a seer; 40 seers to a maund; 12 maunds to a maunee; Halee rupees the currency.</p> <p>The land in which a maunee of seed may be scattered is called a beegah here; 90 rupees to a seer; 40 seers to a maund; 12 maunds to a maunee; 4 maunds to a bhoja; Halee rupees the currency.</p> <p>1,000 cubits square make a beegah; 60 rupees a seer Bhopalee currency; 40 seers a maund; 8 maunds a maunee; a wooden cup used as a measure of wheat, called kora; 9 seers make a kora; 32 koras a maund; Bhopal rupee is the currency, 8 per cent. worse than Company's.</p> <p>105 cubits square make a beegah; 100 rupees a seer for cotton or opium, and 82 rupees a seer for corn; 40 seers to a maund; 4 maunds to a maunee; Bhopalee rupees the currency.</p> <p>9 Kutcha bojās make 6 pucka; 104 Seroj rupees to a seer; a maunee is 4 maunds; currency the Seroj rupee.</p> <p>20 biswahs make a beegah; 80 rupees to a seer; 40 seers to a Pucka maund; 6 maunds to a maunee; 4 maunds to a bhoja; Halee rupees is the currency.</p>

REPLIES to the Questions put by the Honourable Court of Directors—*continued.*

NAMES of DISTRICTS.	1. What was the price of cotton freed from seed in your district last year, at this season, and what is it now?	2. At what rate do the ryots and cultivators sell cotton freed from seed, if paid in advance, and what if not paid in advance?	3. What are the expenses of separating the seed from the cotton by (churkee) distaff, or any other machine used in this country?
Nemawar - -	16 rupees per bojah last year, 20 rupees per bojah this year.	20 to 23½ rupees per maunee with seed; without seed the cotton is, 4 maunds (bhoja), 21 rupees; on advance the rate this year was 16 rupees a maunee, and without advance 20 rupees.	Churkee is the only machine; expense of separating seed, 4 rupees per maunee.
Milkheira - -	5 rupees per maund last year, and 7 rupees per ditto this year.	12 rupees per maunee with seed; seed never taken out from the cotton if an advance of 1 rupee per maunee less.	Churkee is the only machine; R. 1. 9. per maunee, the cost of separating the seed.
Kanur - -	6 rupees per maund last year, 7½ rupees per ditto this year.	12 rupees, or Rs. 12. 8. per maunee; a rupee less in advance.	Churkee is the only machine; R. 1. 12. per maunee, the cost of separating the seed.
Piplone - -	3½ rupees per maund last year, 3½ rupees this year.	12½ rupees per maunee; on advance 10 rupees per maunee.	Churkee the only machine; R. 1. 8. per maunee, cost of separating the seed.
Soosnair - -	3½ rupees per maund last year, 4 rupees this year.	12 rupees per maunee; on advance 11 rupees.	Churkee the only machine; R. 1. 4. per maunee, cost of separating seed.
Soheit - -	6½ rupees per maund last year, 4 rupees this year.	21 rupees per maund; no advance taken.	Churkee the only machine; 4 rupees per maunee, cost of separating the seed.
Rooneja - -	3 rupees per maund last year, 3½ per ditto this year.	15 rupees per maunee; no advance taken.	Churkee the only machine; 2 rupees per maunee, the cost of separating the seed.
Demass - -	26 rupees per maunee without seed last year, 31 or 32 ditto this year.	13 rupees per maunee with seed; on advance 10 rupees per maunee.	Churkee the only machine; R. 1. 12. per maunee, the cost of separating the seed.
Baroud - -	3½ rupees per maunee last year, 3½ this year.	12 rupees per maunee, and sometimes 12½ rupees; on advance 10 rupees per maund.	Churkee the only machine; Rs. 1. 8. per maund, cost of separating the seed.
Mundisore - -	3 rupees per maund last year, Rs. 3. 12. this year.	16 rupees a maunee with seed; 15 rupees on advance.	Churkee the only machine; 2 rupees per maunee, cost of separating the seed.
Kachrode - -	Rs. 2. 12. per maund last year, Rs. 3. 12. this year.	21 rupees per maunee with seed; 18 rupees on advance.	Churkee the only machine; 2 rupees per maunee, cost of separating the seed.
Naharghur - -	3 rupees per maund last year, Rs. 3. 12. this year.	16 rupees per maunee with seed; 15 on advance.	Churkee the only machine; 2 rupees per maunee, cost of separating the seed.

REPLIES to the Questions put by the Honourable Court of Directors—continued.

4. What are the expenses of transporting cotton from your district to Bombay, Surat, Tunkaria Bunder, Mirzapore, or any other market, and to what port or market is it sent the most?	5. How much is the average produce of cotton in a beegah?	6. How much land in your district is under cotton cultivation, and to what extent could it be increased?	7. What is the measure, currency, the weight of seer, maund, and mannee in your district?
Transported to Mirzapore only; if on a camel the expense is 7 rupees per bojah (4 maunds), if on a cart 12 rupees per ditto.	2 maunds only is produced in a beegah, in which the cotton is 20 seers, and the seed 1½ maunds.	2,000 beegahs; capable of increase.	A beegah is of 20 biswahs; revenue on a beegah, 1 rupee; 90 rupees to a seer; 40 rupees to a maund; 12 maunds to a mannee; 1 bojah is 4 maunds; Halee rupees, the currency.
No exports - - - -	1 maund 10 seers Pucka is the produce of a beegah of seedless cotton.	1,000 beegahs are under cultivation; no increase is possible.	100 square cubits make a beegah; 80 rupees to a seer; 25 seers to a maund; 8 maunds to a mannee; Boondee rupees, the currency.
Consumed; not exported -	2 or 2½ maunds is the produce per beegah.	500 beegahs under cultivation; the same number of beegahs could be added.	100 cubits square is a beegah; 80 rupees a seer; 17 seers a maund; 12 maunds a mannee; Boondee rupees, the currency.
Consumed; not exported -	2 or 3 maunds per beegah the average produce.	300 beegahs are under cultivation; 10 beegahs more could be added.	100 cubits square make a beegah; 80 rupees to a seer; 16 seers to a maund; 12 maunds to a mannee; Boondee currency.
Consumed; not exported -	2 maunds the most, 1 maund 17½ seers the least, produce of a beegah.	1,000 beegahs are under cultivation; 150 more could be added.	90 cubits square to a beegah; 80 rupees to a seer; 25 seers to a maund; 8 maunds to a mannee; Boondee currency.
Consumed; not exported -	1 maund, or half a maund of 42 seers, the produce of a beegah.	100 or 125 beegahs are under cultivation; no increase could be made.	100 cubits square to a beegah; 80 Halee rupees to a seer; 42 seers to a maund; 8 maunds to a mannee, Boondee currency.
Consumed; not exported -	4 Kutcha maunds is the produce of a beegah; 3 maunds the least.	500 beegahs are under cultivation; 300 beegahs more could be added.	90 cubits square to a beegah; 84 rupees to a seer; 16 seers to a maund; 12 maunds to a mannee; Salim Shae rupees, the currency.
Consumed; not exported -	4 maunds of 17 seers each, of the best kind, and either 1 maund, or say 2 the least, produce of a beegah.	275 beegahs are under cultivation; a few beegahs more could be added.	20 biswahs to a beegah; 80 rupees to a seer; 17½ seers to a kutcha; 12 maunds to a mannee; 4 Puckah maunds to a bojah; 40 seers a Pucka maund; currency Halee rupees.
Consumed; no export - -	6 Kutcha maunds could be procured in a beegah, the least, 4 maunds.	500 beegahs under cultivation, 300 more could be added.	100 cubits square to a beegah; 80 rupees to a seer; 16 seers to a maund; 12 maunds to a mannee; Boondee currency.
Transported to Baroach; Rs. 2. 2. the duty.	2 to 6 maunds produced in a beegah.	2,000 beegahs are under cultivation.	100 cubits square to a beegah; 92 rupees to a seer; 15 seers to a maund; 12 maunds to a mannee; the currency, Salim Shae rupees.
Transported to Baroach; R. 1. 2. the cost per maund, but when sent to Tunkaria Bunder, R. 1. 9.	6 maunds the produce of a beegah.	2,000 beegahs are under cultivation, 500 more could be added.	100 cubits square to a beegah; 82 rupees to a seer; 20 seers to a maund; 12 maunds to a mannee; currency, Salim Shae rupees.
Is sent to Mundisore, at a cost of 12 annas per mannee.	3 to 6 maunds the produce of a beegah.	400 beegahs are now under cultivation, 100 more could be added.	100 cubits square to a beegah; 92 rupees to a seer; 16 seers to a maund; 12 maunds to a mannee; currency, Salim Shae rupees.

REPLIES to the Questions put by the Honourable Court of Directors—*continued.*

NAMES of DISTRICTS.	1. What was the price of cotton freed from seed in your district last year, at this season, and what is it now?	2. At what rate do the ryots and cultivators sell cotton freed from seed if paid in advance, and what if not paid in advance?	3. What are the expenses of separating the seed from the cotton by (churkee) distaff, or any other machine used in this country?
Sookhera - -	3 rupees per maund last year, Rs. 3. 12. this year.	16 rupees per maunee with seed; 15 on advance.	Churkee the only machine; 2 rupees per maunee, cost of separating the seed.
Ouiril - -	2 rupees per maunee last year, 2½ this year.	12 rupees per maunee with seed; 10 on advance.	Churkee the only machine; R. 1. 8. per maunee, cost of separating the seed.
Bhussowda - -	4 rupees per maunee last year, Rs. 4. 8. this year.	Rs. 15. 12. per maunee with seed; no advance made.	Churkee the only machine; 2 rupees per maunee, cost of separating the seed.
Dichhan - -	20 rupees per bojah of seedless cotton (of 4 maunds) last year, and 18 rupees ditto, this year.	7½ rupees per maunee with seed; no advance made.	Churkee the only machine; 3 rupees per maunee, cost of separating the seed.
Sagore - -	20 rupees per maunee last year, 24 rupees this year.	12 rupees per maunee with seed; no advance made.	Churkee the only machine; 2 rupees per maunee, cost of separating the seed.
Burnuggur - -	17 rupees or 18 rupees per bojah last year, 26 or 27 this year.	10 to 14 rupees per maunee, always with seed; 2 rupees per maunee less on advance.	Churkee the only machine; expense of cleaning, Rs. 2. 5. per maund.
Sonekutch - -	5 rupees per maunee last year, 8 rupees this year.	12 rupees per maunee with seed; 10 rupees per maunee.	Churkee the only machine; expense of cleaning, R. 1. 12. per maunee.
Bhorassa - -	18 to 20 rupees per bojah last year, 28 to 30 this year, of seedless cotton.	12 rupees per maunee without seed; on advance, 10 rupees, ditto.	Churkee the only machine; expense of cleaning, 2 rupees per maunee.
Newree - -	16 rupees per beegah last year, 22 rupees ditto this year.	12 rupees per maunee with seed; 8 rupees per ditto on advance.	Churkee the only machine; expense of cleaning, 2 rupees per maunee.
Shujawalpore - -	40 rupees per maunee last year, the same this year.	14 rupees per maunee, the bazar rate; 8 rupees on advance.	Churkee the only machine; expense of cleaning, 2 rupees per maunee.
Tonk - -	30 rupees per maunee last year, 36 rupees this year.	13 rupees per maunee with seed; 10 rupees per ditto on advance.	Churkee the only machine; expense of cleaning, 2 rupees per maunee.
Sectamhow - -	Rs. 3. 12. per maund last year, 4 rupees this year.	15 rupees per maunee with seed on advance; without advance, 17 rupees.	Churkee the only machine; expense of cleaning, Rs. 2. 12. per maunee.
Angur - -	8 seers per rupee last year, 5 seers per rupee this year.	12 rupees per maunee with seed; 10 rupees ditto on advance.	Churkee the only machine; expense of cleaning, R. 1. 8. per maunee.

(True copies.)
(signed) P. Melvill,

Under Secretary to the Government of India.

- - - REPLIES to the Questions put by the Honourable Court of Directors—continued.

4. What are the expenses of transporting cotton from your district to Bombay, Surat, Tunkaria Bunder, Mirzapore, or any other market, and to what port or market is it sent the most?	5. How much is the average produce of cotton in a beegah?	6. How much land in your district is under cotton cultivation, and to what extent could it be increased.	7. What is the measure, currency, the weight of seer, maund, and maunee in your district?
Consumed; no export - -	3 to 6 maunds the produce of a beegah.	100 beegahs under cultivation; as much more can be added.	100 cubits square to a beegah; 80 rupees to a seer; 20 seers to a maund; 12 maunds to a maunee; currency, Salim Shaeer rupees.
Is sent to Kochrode, at a cost of 1 rupee per maunee.	3 to 4 maunds the produce of a beegah.	600 beegahs are under cultivation; 500 more could be added.	100 cubits square to a beegah; 80 rupees to a seer; 18 seers to a maund; 12 maunds to a maunee; currency, Halee rupees.
Consumed; no export - -	1½ to 2 maunds the produce of a beegah.	900 beegahs are under cultivation; 50 could be added.	100 cubits square to a beegah; 82 rupees to a seer; 20 seers to a maund; 12 maunds to a maunee; currency, Halee rupees.
Is sent to Burrnuggur, at a cost of 5 rupees per cart, carrying 3 rupees per maunee.	1½ to 6 maunds the produce of a beegah.	150 beegahs are under cultivation; 25 could be added.	20 biswahs to a beegah; 80 rupees to a seer; 40 seers to a maund; 6 Pucka maunds a maunee; 4 maunds to a bojah; currency, Halee rupees.
Consumed; no export - -	5 maunds the average produce.	Not known - -	100 cubits square to a beegah; 80 rupees to a seer; 20 seers to a Kutcha maund; 12 maunds to a maunee; currency, Halee rupees.
Consumed; little or no export	2, 4, to 6 maunds the produce.	Not known - -	5 cubits square to a biswah; 20 biswahs to a beegah; 80 rupees to a seer; 20 seers to a Kutcha maund; 12 maunds to a maunee; 4 maunds to a bojah; currency, Halee rupees.
Sent to Clojein and Burrnuggur.	4 Kutcha maunds the average produce.	3,000 beegahs under cultivation; as many more could be added.	5 cubits square to a biswah; 20 biswahs to a beegah; 80 rupees to a seer; 18 seers to a Kutcha maund; 12 maunds to a maunee; currency, Halee rupees.
Sent to Oojein and Indore, at a cost of R. 1. 8. per bojah.	3 to 4 maunds per beegah.	600 beegahs; as many more could be added.	5 cubits square to a biswah; 20 biswahs to a beegah; 82 rupees to a seer; 18 seers to a Kutcha maund; 12 maunds to a maunee; currency, Halee rupees.
Sent to Oojein and Indore, at a cost of R. 1. 8. per bojah.	2 to 6 maunds per beegah.	750 beegahs; 600 more could be added.	All as the preceding.
Consumed; no export - -	2 to 4 maunds per beegah.	Not known - -	5 cubits square to a biswah; 20 biswahs to a beegah; 60 rupees to a seer; 28 seers to a maund; 8 maunds to a maunee; 6 maunds to a bojah; currency, Halee rupees.
Consumed; no export - -	3 to 6 maunds per beegah.	Not known - -	All as preceding, only that 18 seers make a maund.
Consumed; no export - -	3 maunds per beegah -	3,000 beegahs under cultivation; 3,000 more could be added.	100 cubits square to a beegah; 40 rupees to a seer; 40 seers to a maund; 12 maunds to a maunee; currency, Salim Shaeer rupees.
Sent only to Rutlam, at a cost of 4 rupees per bojah of 4 maunds.	3 maunds per beegah -	Not known - -	100 cubits square to a beegah; 82 rupees to a seer; 16 seers to a maund; 12 maunds to a maunee, Boondee currency.

(signed) R. N. C. Hamilton,
Resident.

I.
Bengal and
North Western
Provinces.

Home Department—Revenue.—No. 16 of 1848.

To the Honourable the Court of Directors of the East India Company.

Hon. Sirs,

IN continuation of our despatch, No. 5 of 1848, dated the 25th March, we have the honour to transmit the accompanying copies of reports from the Resident at Hyderabad and the Commissioner of the Saugor and Nerbudda Territories, having reference to your inquiry as to the extent to which India might supply cotton in the event of there being an increased demand for it in England or elsewhere.

We have, &c.
(signed) *Dalhousie.*
F. Millett.
J. H. Littler.

Fort William, 12 August 1848.

(No. 3966 of 1848).

From *C. Allen*, Esq., Officiating Secretary to Government, North Western Provinces, to *G. A. Bushby*, Esq., Secretary to Government of India, Home Department, Fort William.

Sir,

Revenue Depart-
ment.

IN continuation of Mr. Secretary Thornton's letter, No. 896, to your address, dated the 6th March last, regarding the extent to which India might supply cotton, in the event of an increased demand for it either in England or elsewhere, I am directed by the Honourable the Lieutenant-Governor to transmit to you, for the purpose of being laid before the Right Honourable the Governor-General of India in Council, the accompanying copy of a letter, No. 82, from the Commissioner of the Saugor and Nerbudda Territories, dated the 19th instant, with its enclosures on the subject.

I have, &c.
(signed) *C. Allen*,
Officiating Secretary to Government,
North Western Provinces.

Agra, 28 July 1848.

(No. 1, in No. 3966 of 1848).—(No. 82 of 1848.)

From Lieutenant-Colonel *W. H. Sleeman*, Commissioner, to *C. Allen*, Esq., Officiating Secretary to Government, North Western Provinces, Agra.

Sir,

Revenue.

I HAVE the honour, in reply to Mr. Thornton's letter, No. 528, of the 12th of February last, to submit the reports of officers in charge of districts, as per margin.* These are the only replies that I have as yet received. As soon as replies are received from others they shall be submitted. Captain Ellis was requested to furnish the information required from the native chiefs in Bundelcund, and will do so, but he finds some difficulty in making these chiefs understand what it is that he requires.

2. There is little difference in the quality of the cotton in the different districts under my charge, and the difference of price at the different places arises almost altogether from their different distances from the markets on the Ganges and Jumna (Calpee and Mirzapore), and the difference of duties to which their cotton is liable in passing to them.

3. The

* 1. From Deputy Commissioner, Saugor, of 19 June 1847, No. 183.
2. From - - ditto - - Nursingpore, of 20 April, No. 3.
3. From - - ditto - - Baitool, of 22 March, No. 30.
4. From - - ditto - - Jubbulpore, of 13 June, No. 370.
5. From Superintendent - - Jhaloun, of 18 May, No. 253.
6. From - ditto - in charge of Gwalior Ceded Districts, of 15 May, No. 71.

3. The average produce is, too, about the same in all, and in all the districts a vast deal more of land would be appropriated to the growth of cotton were the price of that article to rise, and keep at a higher rate for a few years. No other article of produce is liable to such fluctuations of price, and casual rises and falls do not much influence the quantity of land under cotton cultivation.

4. The only way to effect improvements in the growth of cotton is, I think, to invite into districts good practical cotton farmers, who will find out the best mode of improving the growth and quality, and show the people that they gain by following it. This might be done at no great cost by giving land rent-free for certain periods to proper persons in the best cotton districts, and advancing money for stock on moderate terms. The American cotton experiments were tried all in an unfavourable time, and their failure should be no discouragement.

5. Native cotton merchants will not make such experiments, and the landholders and cultivators cannot afford to make them; but it is a sad mistake to suppose that they would not gladly adopt improved methods if the advantages were manifest to them.

6. By experiments tried at my suggestion in the Chundeyree District by Captain Blake, it is found that the Burareea cotton used in the fine cloths made at Chundeyree deteriorates rapidly from year to year when removed to that district from Nimaur, where it is produced in perfection. The causes I have not yet discovered. I suppose it is the finest cotton known, and the dearest. It is worthy of remark that the manufacturer cannot use this cotton unless it is brought from Nimaur to Chundeyree, a distance of some hundred miles, before the seed is removed from it. It requires to be used immediately that the seed is removed, or the thread is not fit for the finest quality of cloth.

I have, &c.
(signed) *W. H. Sleeman*,
Commissioner.

Jhanssee, Commissioner's Office,
19 July 1848.

(True copy).
(signed) *C. Allen*,
Officiating Secretary to Government,
North Western Provinces.

(No. 2, in No. 3966 of 1848.)—(No. 183 of 1848.)

From Captain *G. W. Hamilton*, Deputy Commissioner, First Class, Saugor, to Lieutenant-Colonel *W. H. Sleeman*, Agent Governor-General, Jhansie. No. 1, in No. 82 of 1848.

Sir,
I HAVE the honour to forward the information regarding cotton required by your circular, No. 61, dated the 14th of February last.

I have, &c.
(signed) *G. W. Hamilton*,
Deputy Commissioner, First Class.

Saugor, Office of Deputy Commissioner,
19 June 1848.

QUERIES.

1. What is the price of cotton, freed from seed, at the principal mart or marts in your district?

REPLIES with reference to the Districts of Saugor and Dumoh, Saugor and Nerbudda Territories.

1. The average price of cleaned cotton at the principal marts in this district is 6½ seers per Company's rupee.

2. At what price does the ryot sell his cotton, cleaned or uncleaned, and with or without advances?

2. The ryot disposes of his cotton to the trader at about seven seers of cleaned cotton per Company's rupee, and 18½ seers of uncleaned cotton per Company's rupee. These are the usual prices when no advances are made. When advances are given, the rate is of course somewhat lower.

3. What is the expense of cleaning cotton by the churka or foot-roller, or by any other method which may be in use?

3. The only instrument in use for cleaning cotton is the common hand churkha, and about 72 seers can be cleaned from seed for one Company's rupee.

I/
Bengal and
North Western
Provinces.

4. What are the expenses of conveying cotton to the nearest port for shipment?
4. The expense of carrying one tangur of 140 seers from Saugor to Mirzapore is as follows:

	Co.'s Rs.
Carriage, including insurance	3 6 -
Duty paid to Native States	1 8 -
Ditto, to British Custom-house	1 12 -
Package	12 -
Other expenses	2 -
	7 8 -

or Co.'s Rs. 2. 8. per maund: I am unable to state the cost of the conveyance from Mirzapore to Calcutta.

5. What is the average produce of cotton per beegah or acre?
5. The average produce per acre is estimated at 32 seers.

6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried in the event of an increased demand?

6. The total quantity of land under cultivation with cotton is estimated at 50,000 acres, and the produce at 40,000 maunds. This estimate must be near the truth, for in the year ending the 30th of April 1846, above 40,000 maunds of cotton, the produce of the district, paid export duty at the custom-house of Saugor.

About 30,000 acres of uncultivated land are capable of producing cotton, and about 20,000 acres now under cultivation, with other produce, are applicable to the same purpose. Under the present imperfect system of cultivation, the produce would amount to 45,000 maunds; but were the cultivation improved, I have no doubt that the produce would be increased one-half, and it would then reach nearly 1,50,000 maunds. The chief obstacles to an increase are the high charge for transport to Mirzapore, and the heavy duties levied by the native States and the British Government.

The acre mentioned above is the British statute acre. The maund and seer are those established by Government, and the rupee is the Company's rupee.

(signed) *G. W. Hamilton,*
Deputy Commissioner, First Class

Saugor, Office of Deputy Commissioner,
19 June 1848.

(True copy.)

(signed) *H. Power,* Deputy Commissioner, Third Class.

(True copy.)

(signed) *C. Allen,* Officiating Secretary to Government,
North Western Provinces.

(No. 3, in No. 3966 of 1848.)—(No. 3.)

No. 2, in No. 82
of 1848.

From *Edward King Elliot,* Esq., Deputy Commissioner, First Class, Nursingpore, to
Colonel W. H. Sleeman, Governor-General's Agent, Jhansee.

Sir,

I HAVE the honour to acknowledge the receipt of your circular, No. 61, under date the 14th of February last, with its enclosures;* and with reference to the information therein called for, I beg to state as follows:

2. The most simple mode of affording the desired information appears to me to be by placing categorically the questions proposed by the Honourable Court, recording the detailed reply to each, thus:

Question 1. What is the price of cotton, freed from seed, at the principal mart or marts in your district?

Answer 1. There are four principal marts for cotton in the district of Nursingpore; viz. Nursingpore Khas, Chundwara, Tendu Khera, and Koureea. This last-named place is on

* Copy of a letter, No. 247, of 28th January 1848, from the Secretary to the Government of India to Colonel W. H. Sleeman.

Copy of a Despatch, No. 14 of 1847, dated 11 November 1847, from the Honourable the Court of Directors to the Governor-General of India in Council.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 17

on the high road to Hoshungabad, and is close to Gunmura. The price of cotton freed from seed at these places is as follows; viz.

Nursingpore Khas.					} For the maund of 40 seers, each seer being 80 sicca weight.
Chundwara - - -				5 4 -	
Tendoo Khera - - -				4 6 -	
Koureea - - - - -				5 - -	

I.
Bengal and
North Western
Provinces.

2. At what rate does the ryot sell his cotton, cleaned or uncleaned, and with or without advance?

2. From inquiries made I find that the ryot sells his cotton at the following rates per maund of 40 seers of 80 sicca weight; viz.:

	Cleaned.	Uncleaned.	With Advance.	Without Advance.
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Nursingpore Khas - - -	5 - -	- - -	4 8 -	5 - -
Chundwara - - - - -	5 4 -	1 11 -	- - -	- - -
Tendoo Khera - - - - -	4 6 -	- - -	3 8 -	4 6 -
Koureea - - - - -	5 - -	- - -	4 - -	- - -

3. What is the expense of cleaning cotton by the churkha or foot-roller, or by any other mode which may be in use?

3. In the district of Nursingpore cotton is usually cleaned by means of the common churkha, and the expense per maund is as follows:

					} Per maund of 40 seers, of 80 sicca weight each seer.
Nursingpore Khas - - -				8 9 -	
Chundwara - - - - -				9 - -	
Tendoo Khera - - - - -				9 3 -	
Koureea - - - - -				14 - -	

4. What are the expenses of conveying cotton to the nearest port for shipment?

4. From this district the cotton is sent to Mirzapore, on the Ganges, a distance of 300 miles from the sudder station of Kundalee. The cost of transit to Mirzapore is as follows:

Nursingpore Khas - - -					} Per maund of 40 seers, of 80 sicca weight each seer.
Chundwara - - - - -				1 11 6 -	
Tendoo Khera - - - - -				1 14 - -	
Koureea - - - - -				2 - - -	

N. B.—From Mirzapore the cotton is sent by boat to Calcutta, but I am unable to say exactly what may be the expense; the distance by water is calculated at 730 miles.

* 5. What is the average produce of cotton per beegah or acre?

5. I am told that the average produce of cotton per beegah is as follows in this valley:

Pergunnah Nursingpore - - -				30 seers	} N. B.—100 beegahs may be looked upon as 75 English acres.
„ Sreenuggur - - - - -				50 „	
„ Chaumputta - - - - -				60 „	
„ Shahpoor - - - - -				30 „	

Note.—Chendwuru is in the Sreenuggur pergunnah; Tendoo Khera is in the Chaumputta pergunnah, and Kowreeu is in the Shahpoor pergunnah.

6. What is the quantity of land under cultivation with cotton, and to what extent is it possible that the cultivation could be carried in the event of an increased demand?

6. From inquiries made, it would appear that the quantity of land at present under cotton cultivation in this district is as follows:

Nursingpore pergunnah - - -					Beegahs.
Sreenuggur - ditto - - - -					5,000
Chaumputta - ditto - - - -					8,800
Shahpoor - ditto - - - - -					3,538
					20,000
					<u>37,338</u>

18 PAPERS RELATING TO MEASURES TAKEN SINCE 1847

I.
Bengal and
North Western
Provinces.

It would be possible, I am told, to increase this cultivation very nearly 70 per cent., as will be shown in the annexed Table.

	Quantity supposed to be at present under Cultivation.	Additional Quantity that could, it is thought, be brought under Cultivation.	TOTAL.
	<i>Beegahs.</i>	<i>Beegahs.</i>	<i>Beegahs.</i>
Nursingpore - - - - -	5,000	6,250	11,250
Sreenuggur - - - - -	8,800	3,000	11,800
Chaumputta - - - - -	3,538	-	3,538
Shahpooor - - - - -	20,000	15,000	35,000
TOTAL - - - - -	37,338	24,250	61,588

N. B.—In the replies to the foregoing questions the maunds to be considered as 40 seers each seer being of 80 sicca weight. The rupee is the Company's rupee and its component parts; 100 beegahs in this district are equivalent to 75 English acres.

Nursingpore,
Deputy Commissioner's Office,
20 April 1848.

I have, &c.
(signed) *E. K. Elliot*,
Deputy Commissioner, 1st Class.

(True copy).

(signed) H. Power, Deputy Commissioner, 3d Class.

(True copy).

(signed) C. Allen, Officiating Secretary to Government, N. W. P.

No. 3, in No. 82
of 1848.

(No. 4 in No. 3966 of 1848.)—(No. 30 of 1848).

From Lieutenant *A. H. Ternan*, Deputy Commissioner, Second Class, Baitool, to Colonel *W. H. Sleeman*, Commissioner Saugor and Nerbudda Territories, Jhansee.

Sir,

Revenue.

I HAVE the honour to state in reply to your circular, No. 61, dated 14 February 1848, regarding the cultivation of cotton, that the latter is not grown in any part of this district, the inhabitants being supplied entirely from the neighbouring Berar country.

Baitool, Office Deputy Commissioner,
Second Class, 22 March 1848.

I have, &c.
(signed) *A. H. Ternan*,
Deputy Commissioner, 2d Class.

(True copy).

(signed) H. Power, Deputy Commissioner, 3d Class.

(True copy).

(signed) C. Allen, Officiating Secretary to Government, N. W. P.

No. 4, in No. 82
of 1848.

(No. 5 in No. 3966 of 1848.)—(No. 370 of 1848).

From Major *J. Macadam*, Deputy Commissioner, First Class, to Lieutenant-Colonel *W. H. Sleeman*, Commissioner in the Saugor and Nerbudda Territories, Jhansee.

Sir,

Revenue.

I HAVE the honour to acknowledge the receipt of your letter, No. 61 of the 14th February last, with its enclosures, from the Secretary to the Government of India, requesting information regarding the cultivation of cotton, and in reply I beg to give the following answers to the six queries:

1. Cotton freed from seed sells at the principal marts of this district at six Nagpooree rupees per maund, which will be equivalent to *Co.'s Rs.* 5. 4.

2. If the ryot has obtained advances, he sells his cotton for one rupee per maund less than the market price, besides paying interest at the rate of 12 per cent. for the amount advanced. This is for cotton that has been cleaned; cotton uncleaned is rarely sold.

3. A small hand churkha is used for cleaning cotton, and the expense incurred is 12 annas per maund.

4 The average expense of sending cotton from this to Mirzapore is *Rs.* 1. 12. per maund.

5. Each

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 19

5. Each beegah of land in a good season produces 1 maund and 20 seers of cotton; but if the season has been unfavourable, the average produce will be 1 maund.

6. The average quantity of land cultivated by cotton is 33,652 beegahs, and if there was a greater demand, double this would, no doubt, be cultivated.

The maund here mentioned is of 40 seers of 80 Company's rupees each.

I.
Bengal and
North Western
Provinces.

I have, &c
(signed) J. Macadam,
Deputy Commissioner, 1st Class.

Jubulpore, Deputy Commissioner's Office,
15 June 1848.

(True copy.)

(signed) H. Power, Deputy Commissioner, 3d Class.

(True copy.)

(signed) C. Allen, Officiating Secretary to Government, N W. P.

(No. 6 in No. 3966 of 1848.)—(No. 253 of 1848).

No. 5, in No. 82
of 1848.

From Captain D. Ross, Superintendent of Jalown, to Lieut.-Colonel W. H. Sleeman, Agent
Governor-General in Bundelkund, &c. &c. &c., Jhansee.

Sir,

I HAVE the honour to acknowledge the receipt of your letter of the 14th February last, No. 30, with enclosures as per margin,* and to submit replies to the queries circulated by order of the Honourable Court of Directors, in regard to the cultivation of cotton in the North Western Provinces, so far as relates to the Jalown district.

There are nine pergunnahs† in Jalown, including the two called Jhansee pergunnahs of Duboi and Gurotah, and the confiscated jahgeer of Chergong, in all of which slight differences occur in regard to the price of cotton, the cost of cultivation, and the produce per beegah; the weights also vary in some degree, and there are three different kinds of rupees current, of local coinage. I prepared a table exhibiting the details in each pergunnah, and from it struck an average for the whole district, reducing the weights to the Company's standard of 80 tolahs to a seer, and converting the local rupees into Company's currency, at the intrinsic rate of exchange, as ascertained at the Agra assay office. I have replied to the queries seriatim, in the order they are put:—

Question 1. What is the price of cotton freed from seed at the principal mart or marts in your district?

Answer. The average price of cotton freed from seed is Co.'s Rs. 5. 13. per maund. The town of Jalown was formerly a considerable mart for cotton, but has fallen into insignificance, and for many years past the bulk of the cotton grown in the district is purchased by agents at Kooneh (in zillah Humeerpore), which is the largest cotton mart in this part of Bundelkund; it is bounded on all sides by the pergunnahs of Jalown, and is about 40 miles distant from Calpee, whence the cotton is conveyed by the river route to the Presidency. From pergunnah Kunnur to the northward, and Jalown Khas, a good deal of cotton is sent direct to Calpee, the distance being less than *via* Kooneh.

2. At what price does the ryot sell his cotton, cleaned or uncleaned, and with or without advances?

The rate at which the ryot sells his cotton, taking the average of the district, is—

For cleaned Cotton				For uncleaned Cotton				
With Advances.		Without Advances.		With Advances.		Without Advances.		
Per Maund.				Per Maund.				
Co.'s Rs.	a.	p.	Co.'s Rs.	a.	p.	Co.'s Rs.	a.	p.
5	4	-	5	13	-	1	10	-

3. What

* Copy of letter from Secretary to Government of India, No. 247, dated 28 January 1848, with extract from the proceedings of the Governor-general in Council in the Home Department, dated 15 January 1848, No. 20.

† Jalown Khas, Kunner, Mahumdubad, Etoura Ruepoor, Mote, Muhola, Dubai, Gurotah, Chergong.

I.
Bengal and
North Western
Provinces.

3. What is the expense of cleaning cotton by the churkha, or foot-roller, or by any other method which may be in use?

The churkha is the only machine used in cleaning cotton, and the expense per maund is 12 annas, the maund being 40 seers of 80 tolahs each.

4. What are the expenses of conveying cotton to the nearest port for shipment?

The average cost of carrying the cotton to Calpee, on the Jumna, is 3 annas and 7 pie per maund.

5. What is the average produce of cotton per beegah or acre?

The average produce per beegah is 27 seers, the seer being 80 tolahs, and the beegahs consisting of 20 guntahs, each $7\frac{1}{2}$ feet, that is, 50 square yards.

6. What is the quantity of land under cultivation for cotton, and to what extent is it probable that the cultivation could be carried, in the event of an increased demand?

The land at present under cotton cultivation is 1,13,201 beegahs, and, in the event of an increased demand, and encouragement given, it might be extended to 2,59,080 beegahs; the principal increase would be in Kunner and Mote, the lands of these pergunnahs being particularly favourable for cotton.

I have, &c.

Jalown Superintendency, Orai,
18 May 1848.

(signed) D. Ross, Superintendent.

(True copy.)

(signed) H. Power, Deputy Commissioner, 3d Class.

(True copy.)

(signed) C. Allen, Officiating Secretary to Government, N. W. P.

No. 6, in No. 82 of 1848. (No. 7 in No. 3966 of 1848.)—(No. 71 of 1848.)

From Captain D. Ross, Superintendent of Jalown, in charge (in charge Gwalior ceded district), to Lieutenant-Colonel W. H. Steeman, Agent Governor-General for Scindiah's Dominions, Jhansi.

Sir,

I HAVE the honour to acknowledge the receipt of your letter, No. 30, dated the 14th February last, with enclosures as per margin,* and to submit replies to the queries circulated by order of the Honourable Court of Directors, in reference to the cultivation of cotton in the North Western Provinces, so far as the Gwalior ceded districts of Kuchmahagar and Bhundere under my charge are concerned. There are three † pergunnahs in these districts, the tahseeldars of which aided me in obtaining the details required from the Karoongoe records chiefly, and the Putwurree papers; the result can only be considered a fair approximation to the truth; and in such inquiries it is seldom practicable to obtain more.

I have placed the replies in juxtaposition with the queries.

Question 1. What is the price of cotton freed from seed, at the principal mart or marts in your district?

Answer. The average price of cotton, freed from seed, is Co.'s Rs. 6. 11. 5½. per maund. There is no particular mart for cotton in the district; but all the surplus produce not required for local consumption is purchased by agents at Koonch, a large cotton mart, in the Humeerpore collectorate, about 30 miles distant from Bhundere, and the same distance from Madhogurh.

2. At what price does the ryot sell his cotton cleaned or uncleaned, and with or without advance?

The rate at which the ryot sells his cotton, taking the average of the three pergunnahs is:—

For cleaned Cotton						For uncleaned Cotton					
With Advances.			Without Advances.			With Advances.			Without Advances.		
Per Maund						Per Maund					
Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.
5	15	—	6	7	6	1	12	1	1	13	2½

3. What

* Copy of Letter from Secretary to Government of India, No. 247, dated 28 January 1848, with Extract from the Proceedings of the Governor-general in Council in the Home Department, of 15 January 1848, No. 20.

† Bhundere, Modhogurh, Indoorkee.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 21

I.
Bengal and
North Western
Provinces.

3. What is the expense of cleaning cotton by the churkha or foot-roller, or by any other method which may be in use?

The churkha is the machine employed here in cleaning cotton; the expense per maund is about 14 annas. In some places the labourers are paid in grain, at others in money.

4. What are the expenses of conveying cotton to the nearest port for shipment?

The nearest port to which cotton is conveyed for water transport is Calpee, on the Jumna, distant 70 miles from Bhundere, 50 from Madhogurh, and 60 from Indoorkee; the average rate of conveyance is about 6 annas a maund.

5. What is the average produce of cotton per beegah or acre?

The average produce per beegah is about 23 seers; the beegah in the ceded districts measures 18 guntahs of 5 cubits each, or 45 square yards. The weights differ in the three pergunahs, the average being 94 tolahs for the seer, or 3,760 for the maund.

6. What is the quantity of land under cultivation for cotton, and to what extent is it probable that the cultivation could be carried, in the event of an increased demand?

✓ The land at present under cotton cultivation is 25,099 beegahs, and in the event of an increased demand, it might be extended to 35,000 beegahs at least.

N. B.—There are three kinds of rupees current in these districts, Nanashae, Balashae, and Gwalior rupees, which in answering the above questions have been converted into Company's rupees at the intrinsic rate of exchange ascertained some time ago at the Agra assay office; viz. :—

	Co.'s Rs.	Discount.
100 Balashae rupees	- - 87 8	- - 12/8 per cent.
100 Nanashae "	- - 87 4	- - 12/12 ditto.
100 Gwalior "	- - 93 12	- - 6/4 ditto.

I have, &c.
(signed) D. Ross,
Superintendent in charge, G. C. D.

Jalown Superintendency, Orai,
15 May 1848.

(True copy.)

(signed) H. Power, Deputy Commissioner, 3d Class.

(True copy.)

(signed) C. Allen, Officiating Secretary to Government, N. W. P.

(No. 1890.)

EXTRACT from the Proceedings of the Right Honourable the Governor-General of India in Council in the Foreign Department, under date the 29th July 1848.

(No. 85 of 1848.)

From Colonel J. Low, Officiating Resident at Hyderabad, to H. M. Elliot, Esq. Secretary to the Government of India, Foreign Department, Fort William.

Sir,

WITH reference to Major-general Fraser's letter to your address, No. 32, under date the 16th February last, wherein he informed you that he had adopted measures for obtaining the information required in your letter No. 247, of the 28th January, on the subject of cotton cultivation, I have the honour to forward for submission to the Right honourable the Governor-general in Council, the accompanying copies of the replies received from the individuals noted in the margin,* to each of whom was furnished an extract from the Honourable the Court of Directors' despatch, dated the 10th November 1847.

Hyderabad Residency,
14 July 1848.

I have, &c.
(signed) J. Low, Resident.

* His Highness the Nizam's Minister; Capt. Taylor, on special duty, Shorapore; Capt. Dorin, Superintendent of Roads; Capt. Fenwick, pensioned officer, Nizam's service; and Pestonjee Merjee, esq.

I.
Bengal and
North Western
Provinces.

TRANSLATIONS of the Answers given by the Minister to the Queries regarding the Culture and Trade of Cotton in the Nizam's Country.

Answer 1. There are two principal marts in the Berar zillah, Khangaum and Oomrawuttee, to the former is attached the petty marts of Akoat, Argaum, Julgaum, Mulkapoor, Jamode, &c., and to the latter those of Karunjah, Tullagaum, Maholee, Naadgaupett, &c. The dealers of Khangaum purchase cotton freed from seed at prices averaging in cheap seasons from 15 to 20 Hyderabad rupees per pullah of 120 Indian seers, or 240 lbs., and in dear seasons from 25 to 35 Hyderabad rupees per pullah; these prices are, however, determined and vary according to the produce of cotton in several countries, and the state of the markets at Bombay and Mirzapore, to the former of which the large exportation, and to the latter the smaller is made. Besides the Berar zillah, there are other small marts in Busmut and Mudnoor, &c., and a large mart at Gangaratty in the Raichore talooka, where also the dealers purchase cotton.

2. The ryots do not sell cleaned cotton, but only uncleaned, with and without advances; of the uncleaned cotton mixed with seed there are three different sorts, the value of which in cheap seasons is from 11 to 15 Hyderabad rupees per pullah, a pullah of which when cleaned and freed from seed, leaves of cleaned cotton from one-half to three-fourths pullah. The dealers who made advances purchase the cotton from 8 to 12 annas per pullah cheaper than the above rates.

3. In Berar zillah, the cotton is cleaned by country churkhas, and the expense of cleaning one pullah mixed with seed is from 14 Hyderabad annas to Rs. 1. 2. per pullah, the seed itself being also delivered to the dealer, but no charge is made when the cleaners are allowed to retain the seed, because the value of the seed is estimated to be equal to the above rates for cleaning.

4. From the principal marts of Khangaum and Oomrawuttee and their subordinate marts, the cotton is conveyed to the bunders of Panwell and Carsellis in the Bombay Presidency, at the hire of four to five Hyderabad rupees per pullah from the former, and at six to seven Hyderabad rupees per pullah from the latter, and their subordinate marts. In addition to which a charge of 12 annas to one Hyderabad rupee per pullah is incurred in packing the cotton, independent of the transit duties (Rahdaree), within his Highness's territories, charged at several stations of the circar, and other stations belonging to jaghiredars, and the right (wiswa) of moocudums, and the watcher at night, &c. which all amount from one to one and a half Hyderabad rupee per pullah, exclusive of the custom charged in the Bombay Presidency.

5. For a very long time past, no system has obtained of measuring and surveying the land in his Highness's territories, and the fields for the several products are not separate, the cultivators growing cotton and grain in their respective fields together and indiscriminately, as their inclination or interest dictates, consequently no correct information can be given on the subject.

6. As it cannot be correctly ascertained at present what quantity of land is under cotton cultivation, requisitions will be made to the talooqdars on this subject.

(True translation.)

(signed) J. Low, Officiating Resident.

(No. 97 of 1848.)

From Captain M. Taylor, on Special Duty, Shorapoor, to Colonel J. Low, c. B., Officiating Resident, Hyderabad, dated the 23d June 1848.

Sir,

In reply to a letter from Major-general Fraser of the 16th February last, No. 166, and its enclosure, copy of a despatch, No. 14, from the Honourable the Court of Directors in the Revenue Department, I have the honour to submit to you the following particulars in regard to the cotton cultivation and trade of the district of Shorapoor.

Question 1 of the Court's despatch. What is the price of cotton freed from seed at the principal mart or marts in your district?

2. The price of cotton freed from seed in these districts this season is two Hyderabad rupees per maund, of 48 cutcha seers, or 16 rupees per cutcha candy of eight maunds. I have never known it to rise above three rupees per maund, nor to fall below one to one and a quarter. Taking the cutcha seer at half a pound, which is nearly its weight, the pukka seer being 80 rupees weight, it follows that the price per Bombay candy of seven cwts. or 784 lbs. would be at the present rate here, 65 Hyderabad rupees, or at the current exchange Co.'s Rs. 52. 14., or nearly so, the price of cotton of similar quality, viz., Oomrawuttee and Burseer, being 75 to 80 Company's rupees in Bombay, according to the last quotations I have observed, or a difference of Co.'s Rs. 24. 10. on an average per candy of seven cwts.

3. There

3. There is no principal mart in the Shorapoor country; the cotton is usually purchased in small quantities by itinerant dealers at the villages where it is produced; or orders are sent for it from the manufacturing towns in the neighbourhood, Narainpett, Dhanwara, Gurmurt Kal, &c., in the Nizam's country; and Suggee Shahpoor, Rukmapoor, &c., in this district; or it is sent by the patells of villages, or merchants resident at Shorapoor, and elsewhere in the country, to these towns, and other marts which will be specified hereafter, on sale on their own account.

2. At what price does the ryot sell his cotton?

4. It does not appear the practice here to give or take advances which would have the effect in all probability of lowering the price to ryots; it may possibly be done in a few instances, but they are so few as to be undeserving of notice, and are taken by poor people whose produce of cotton is very trifling. There is no capitalist in the country who could make advances to any extent worth mentioning. If cotton is sold uncleaned by the ryot, the price per Shorapoor rough cotton candy of 240 seers is at present 10 rupees, which will produce 6 ½ mds. of clean cotton, or in the following proportion:

	<i>Rs. a. p.</i>
Seed, 13 ½ mau. at 3 annas per mau. - - - -	2 8 -
Cotton, 6 ½ „ at 2 rupees - - - -	13 - -
20 mau.	15 8 -
Deduct hire for cleaning the above - - - -	1 9 6
Balance - - - <i>Rs.</i>	13 15 6
Apparent profit on each candy - - -	<i>Rs. 3 15 6</i>

But from this must be deducted the expense of collecting small quantities from many persons, bullock-hire, &c.

5. It is most frequently the case that the ryot cleans and sells his own cotton, reserving the seed for the consumption of his own cattle; he thus obtains an advantage over the person who sells his cotton uncleaned, of considerable amount, according to the calculation in the preceding paragraph, and reserving the cleaned cotton, is able to take advantage of the market, or the general price that may rule in his district after the harvest, which of course is ruled by the crop, and the demand which may be existing. This year, as I have stated, it is not under two rupees a maund. I have no doubt that the small capitalists in each village lay up a considerable portion of cotton in the rough, and clean it themselves, thus deriving a profit; but the amount is after all inconsiderable in relation to the quantity of produce which is cleaned and sold by the ryots themselves.

6. A very general method of disposing of their cotton among the ryots is to spin it into yarn; one maund of cotton or 12 seers (pukka) will spin into 36 hanks of the coarsest yarn, which at 10 hanks for a rupee, gives

- - - - <i>Rs.</i>	3 9 6
Deduct for cleaning one maund cotton - - - -	- 2 -
Net Price - - - <i>Rs.</i>	3 7 6

Or profit on cotton alone - - - - - *Rs. 1 7 6*

Finer yarn is six hanks for a rupee, and four hanks to a seer.

Thus, 12 seers, at four hanks per seer -- - - *Rs. 48 - -*

	<i>Rs. a. p.</i>
Six hanks per rupee - - - - -	8 - -
Deduct for cleaning - - - - -	- 2 -
Price of cotton - - - - -	7 14 -
Profit - - - <i>Rs.</i>	5 14 -

Finer still:

	<i>Rs. a. p.</i>
One seer, 22 ½ hanks.	
12 ditto, 1 mau., 270, at 13 hanks per rupee - - -	20 13 3
Price of cotton - - - - -	2 - -
Profit - - - <i>Rs.</i>	18 13 3

Notes.—The cotton for the finest yarns is not cleaned by the machine, but carefully picked from the seed so as to preserve the staple.

I.
Bengal and
North Western
Provinces.

The finest spun, for turbans, scarfs, &c. :

One seer, 28 hanks.		Rs.	a.	p.
One mau., 336 ditto, at 10 for a rupee	- - - - -	33	9	7
Price of cotton	- - - - -	2	-	-
Profit		Rs.	31	9 7

7. Allowing two women spinners to a house, each woman spinning half a maund of the coarsest yarn per month, one maund of yarn would be produced.

		Rs.	a.	p.
Value, rupees	- - - - -	3	7	6
Of finer, in the same time, ditto	- - - - -	5	14	-
		Rs.	9	5 6
Of still finer, in treble the time, ditto	- - - - -	Rs.	18	13 3
Of the finest, in ditto - ditto - ditto	- - - - -	Rs.	31	9 7

according to the ability of the spinners; thus materially increasing the value of small products. Yarn finds a very ready sale, both for local manufacturing consumption, and for exportation to the southward.

3. What is the expense of cleaning cotton by the churka or foot-roller, or by any other method which may be in use?

8. The average expense of cleaning cotton may be estimated from the calculation in para. 4, when the hire is paid upon the cotton produced. Another method of payment commonly resorted to, is to give the cleaners two-thirds of the seed; which, if the seed be at its present price, would give Rs. 1. 10. per gross candy of 240 seers. The amount to be paid varies, however, with the season; at present it is less than in the height of the monsoon, when the dampness of the cotton causes additional labour; it is then as high as two rupees or Rs. 2. 4. per gross bandy. There is no difference in the charge, whether the foot-roller or churka is employed, and both are in common use; there are no other methods of cleaning cotton used, and except what is picked by the hand for very fine yarn, the whole of the cotton of the country is cleaned by either one of these methods.

4. What are the expenses of conveying cotton to the nearest port for shipment?

9. The nearest port of shipment is Rajapoor, in the Concan, to which some cotton is sent. The cost of transmission is calculated in two ways; if by a trader on his own bullocks, it is estimated at five rupees a bullock load for the load of 10 maunds. If the bullocks are hired, the cost is Rs. 7. 8. per load to Rajapoor. Little cotton, however, goes there direct, the greater quantity is taken to Sunkeshwur, near Kolapoor, whence I believe it to be sent to Rajapoor for the Bombay market, or perhaps to some extent used in manufactories in that part of the country.

10. An estimate of the cost and transit expense of a load of cotton, 10 maunds, or 120 seers, pukka, is as follows:—

Cost of cotton, 10 maunds, at 2 Hyderabad rupees	- - - - -	Rs.	20	-	p.	-
Hire to Rajapoor	- - - - -		7	8		-
Export duty from Shorapoor State	- - - - -		1	-		-
Village dues on journey	- - - - -		-	4		-
<i>Hyderabad Rupees</i>			28	12		-
<hr/>						
Price at Rajapoor per load of 10 maunds	- - - - -	Co.'s Rs.	25	-		-
Exchange	- - - - -		4	11		-
<i>Hyderabad Rupees</i>			29	11		-
<hr/>						
Apparent profit	- - - - -		15	-		-

The expense of the above will be diminished, and the profit increased by assuming the expense of the owner's bullocks being five rupees instead of Rs. 7. 8., which is generally the case.

11. An estimate of the cost, transit, and expense to Sunkeshwur or Meeritah, the bullocks being the merchant's property.

Cost

Cost of cotton, 10 maunds, at two rupees	- - -	Rs.	a.	p.
Bullock expenses	- - -	20	-	-
Export duty	- - -	3	-	-
Village dues on road	- - -	1	-	-
		-	4	-
<i>Hyderabad Rupees</i>		24	4	-
<hr/>				
Usual value at Sunkeshwur, 3 Sumboo rupees per maund	- - -	30	-	-
Exchange, at two annas per rupee	- - -	3	12	-
		33	12	-
<hr/>				
Apparent profit per bullock load	- - -	9	8	-

12. There is, besides, export to Sholapore, to which place the hire of a bullock is three rupees for eight marches of about 12 miles each; the expense about Rs. 1. 8. per bullock if the proprietor's bullocks go. Cotton sells for 2½ Beelapore rupees per maund in Sholapore, and the cost of transit from Sholapore to Panwell by cart, is Rs. 4. 8. the cart carrying 30 maunds or three bullock loads, so that an estimate may be made, as follows, of the transmission of 10 maunds, or a bullock load.

Present price, Hyderabad rupees	- - -	Rs.	a.	p.
Hire of one bullock	- - -	20	-	-
Proportion of hire by cart to Panwell, Co.'s Rs. 1. 8.	- - -	3	-	-
Export duty from Shorapoor	- - -	2	-	-
		1	-	-
<i>Hyderabad Rupees</i>		26	-	-
<hr/>				
Price at Bombay, rate per bullock load of 10 maunds, Co.'s Rs. 1. 8.	- - -	24	7	10
Exchange on Co.'s rupees	- - -	4	9	3
<i>Hyderabad Rupees</i>		29	1	1
<hr/>				
Profit	- - -	3	1	1
<hr/>				
Or if sold at Sholapore, cost of cotton, 10 maunds	- - -	20	-	-
Expenses, as above	- - -	4	-	-
		24	-	-
<hr/>				
Sale, at Beelapoor Rupees 2. 8. per maund	- - -	25	-	-
Exchange -	- - -	2	8	-
<i>Hyderabad Rupees</i>		27	8	-
<hr/>				
Apparent profit -	- - -	3	8	-

13. By the above calculations, which are averages taken from a variety of statements, it appears rather more profitable to send the cotton to the coast by way of Sholapore, on account of the cart carriage to be had at Sholapore, than on bullocks by way of Sunkeshwur to Rajapoor. Still the quantity that goes to the latter far exceeds the former, as the distance is shorter, and there is the advantage of a profitable return trade in kerana, or groceries.

14. It must be observed, however, in reference to the above, that two rupees per maund is a high price for cotton in these districts. Under a fair season the rate generally ranges from 1½ to 1¾ rupee per maund, or Rs. 12. 8. to 15 rupees per load of 10 maunds, which would of course affect the statements given above in relative proportion. This year the crop is a very scanty one, and the price is therefore considerably higher than usual.

5. What is the average produce of cotton per beegah or acre?

15. An average good crop of cotton from a clean field of 30 beegahs, the size of the beegah being 3,864 square yards, is estimated with seed, at six candies, of 240 seers per candy, or 296— Sess. 2. D 1,440

I
Bengal and
North Western
Provinces.

1,440 seers, or 48 seers, 98 lbs. per beegah. A lesser crop would be five candies, or 1,200 seers, 40 seers per beegah. An inferior crop, 3 candies or 720 seers, 24 seers per beegah. A very poor crop, 2 candies or 480 seers, 12 $\frac{1}{2}$ seers per beegah.

16. The above would give an average of four candies at least on each 30 beegah field, and on all descriptions of soil, or 32 seers or 64 lbs. per beegah; and as the cotton crop is usually a good one, I do not think in a series of years that the average would be under five gross candies per field of 30 beegahs or 40 seers, 80 lbs. per beegah, as the highest average taken is often exceeded in favourable seasons, and in fertile roads. The above estimate is taken from several, obtained from different cotton districts of the Sumusthan.

6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried in the event of an increased demand?

17. It is difficult here, where the land is not properly defined, at least not to that degree as to ensure entire accuracy even in those portions which are khalsa, or which pay rent to the State, to afford so exact an answer to the first part of this question as I could wish, and it is rendered more difficult by the immense quantity of land, in proportion to the lands paying rent, which are held in enam, and rent free tenures by the beadars and other enamdars, of which there is no account, and the number of jagheer villages 211 in proportion to 299, the entire number in the Sumusthan over which I have no direct control. Having required returns, however, of all the cotton cultivation in all villages, whether khalsa or jagheer, and on all lands, whether khalsa or enam, I beg to submit the result in Table A, appended to this report.

18. As some care had evidently been taken in the compilation of the returns sent from the villages, the result may be somewhat approaching to the truth, at the same time, as I have no expectation that the full amount in the jagheer villages and in enam lands has been returned, so I should consider an addition of 10 per cent. to the whole amount of cultivation, or beegahs 3,940, would be under the result of actual measurement. The total in this case would be, beegahs 43,268.

19. I have only, however, received returns from 327 villages out of 510, and at the same average, which would not be far wrong; on the whole, the result would be beegahs 67,145 in 510 villages, khalsa and jaghire; assuming further, five candies gross as an average produce per curroo of 30 beegahs, the result would be, candies 11,190, or of clean cotton, at 6 $\frac{1}{2}$ maunds per candy, 72,735 maunds, value Rs. 1,43,570.

20. In general there is not much waste land in the Sumusthan, and in several of the best talooks the general cultivation has increased so materially within the last few years that there is little land comparatively now left waste which could be broken up for any very extensive new cultivation of cotton; waste land still, however, exists, and I have little doubt, that whatever remains, even so as not to afford grazing land for the village cattle, would be immediately broken up if there was fair encouragement for the produce of a staple which could be readily sold at a remunerating price.

21. Independent of the waste lands, however, there is a considerable proportion of cultivated land in an indifferent state of cultivation; that is, the fields are not properly cleaned up, and grass has grown up in patches through them, which it requires some outlay of capital to eradicate. This has been the result of idleness on the part of the farmers, in a great measure; of their having been accustomed to a very low rate of rent, which it required no exertion in particular to pay; and in many instances, of an unwillingness to expend capital upon their land when its continuance to them was uncertain, and to the produce being of unremunerating quality. This land would, I have no doubt, be greatly improved under any stimulus of the cotton cultivation.

22. For I am satisfied, by frequent discussions with the people of all classes, that, provided there was a ready market for cotton, and the price was regularly maintained by a steady demand to a remunerative rate, the cultivation of it would be preferred to almost any other, both because it is easy of management, and the returns are not liable to those great fluctuations which attend jowarree, the other great staple of the district. I have often been assured, and it is reasonable to suppose, that the lands at present neglected would be improved, those which are waste broken up, and jowarree to some extent superseded by cotton, to secure a return which would be regular and permanent, and which, in reference to its intrinsic value, would not be liable to any great fluctuation of price. These causes would, I am strongly of opinion, give a gradual increase of from 30 to 50 per cent. on the present cultivation, if not more.

23. The present price, two Hyderabad rupees per maund, is one that could be maintained without any loss to the trader or purchaser at Bombay, supposing the trade to be regularly opened to that port, and it would afford a very fair remuneration to the ryot here, as will be apparent by the following calculation.

In

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 27

I.
Bengal and
North Western
Provinces.

In a field of 30 beegas, or by Shorapore land measure, one cooroo :

	Rs.	a.	p.
Gross produce, at general average taken in para. 15, five candies of 240 seers, including seed, at 10 rupees per candy	50	-	-
Deduct rent of land, at average of 11 annas per beegah	22	8	-
Balance	27	8	-
Add profit upon five candies of cotton in cleaning and seed, as per para. 4, at 3.15	19	11	-
Profit to ryot	47	3	-

24. Should the ryot have broken up new land under the usual rate of rent-charge, his profit would be much greater, viz. :

	Rs.	a.	p.
30 beegas of land on local tenure, for seven years, at per annum	3	-	-
Meras charges per annum	4	-	-
	7	-	-
Produce and value as above	69	11	-
Deduct rent and charges	7	-	-
Profit to ryot	62	11	-

25. The foregoing will satisfy you that cotton to the ryot is a safe article of cultivation, allowing the average of five candies per 30 beegas only as produce, and the present price ten rupees per gross candy, including seed, or 16 rupees per cutcha candy of 8 mau. or 96 seers. When the price ranges below this rate, the return to the ryot is, of course, more unremunerative in the gross, though the household industry of the people in converting it into yarn raises the value to a very considerable extent, as I have already explained in para. 6.

26. At the present price, 16 rupees per candy of 192 lbs., cotton appears, by the following calculation, at a very favourable price for export to Bombay. The Bombay cotton candy is 7 cwt., 784 lbs.; therefore, 192 lbs. : 16 rs. : 784 lbs. = 65 Hyderabad rupees, less exchange, at 19 per cent. = 53 Co.'s rupees per candy of 7 cwt., or thereabouts.

27. The present price of Kompta and Barsee cotton, both of which are of similar quality to that produced here, is generally about 80 Co.'s rupees per candy, in Bombay; according to the above calculation, therefore, there would be a balance of 27 rupees per candy to meet charges, and the following estimates will afford comparison of the rates of transit by both routes used, viz., Sholapore and Panwell, and Sunkeshwur and Rajapoor in the Concan.

	Rs.	a.	p.
<i>Via</i> Sholapore :			
Cost of a Bombay candy of cotton, 7 cwt. as per para. 26	53	-	-
Hire of bullocks for Bombay candy of 392 seers, three bullocks, Shorapore to Sholapore, at 3 Hyderabad rupees per bullock load	7	7	-
Export duty from Shorapore, at 1 Hyderabad rupee per bullock load	2	7	-
Hire of a cart from Sholapore to Panwell, carrying three bullock loads, at Rs. 1. 8. per load	4	8	-
Co.'s Rs.	67	8	-
Boat-hire and charges from Panwell to Bombay not known.			
<i>Via</i> Rajapore :			
Cost of one Bombay candy	53	-	-
Hire to Rajapore, at Hyderabad rupees Rs. 7. 8. per bullock load, three bullock loads	18	8	-
Export duty to Sholapore	2	7	-
Co.'s Rs.	73	15	-
Boat-hire to Bombay not known.			

I.
Bengal and
North Western
Provinces.

28. You will observe, that while the former gives a fair hope of profit, the latter barely covers the price of cost and carriage, and it is not inviting in reference to the risk and the state of the markets. When the cotton is at a low rate here, and is purchased by itinerant merchants, who drive their own cattle doubtless, the trade is more profitable than it appears under the present calculations; but the great inducement to take cotton to Rajapoor is the return trade in kerana or groceries, which is very profitable, and whilst there may be comparatively little profit on cotton, still there is always some, which, in conjunction with the kerana trade is sufficient inducement to make the adventure.

29. The foregoing will show you the manifestly greater advantage which carts possess over bullocks. From hence to Rajapoor cannot be further than Sholapoor is from Panwell, if indeed so far, but while a Bombay candy of 784 lbs. can be transported on a cart from Sholapoor to Panwell for *Co.'s Rs.* 4. 8., the same quantity carried on hired bullocks from Sholapoor to Rajapoor costs *Co.'s Rs.* 18. 8. Rajapoor or some port on the western coast is evidently the proper outlet to the cotton trade of this country, and it would be most desirable to open means of direct conveyance by carts to that quarter. This consideration, however, forms a separate part of the general subject of this report, which I purpose to touch upon in its conclusion.

30. Having in the preceding paragraphs replied as fully as I am able to the questions in the Honourable Court's despatch, I beg to add, in pursuance of General Fraser's instructions, such knowledge as I possess of the cotton districts south and south-west of Shorapoor, and in general between the Kistna and Toongabudra rivers, the produce of which is sent to Compta on the western coast, and also those north of the Bheema, from which the marts of Sholapoor and Barsee are in some degree supplied for the Bombay market.

31. With few exceptions, the whole of the country south of the Kistna produces cotton in very considerable quantities. The cotton districts are as follows, with the revenue as nearly as I can ascertain them here:

	<i>Rs.</i>
Gelboorga - - - - -	32,000
Kooknoor - - - - -	20,000
Munwee - - - - -	33,000
Kowtul, Bheemo, &c. - - - - -	30,000
Singsoogoor, &c. - - - - -	6,000
Moodgul - - - - -	40,000
Jowulgera and Sirmoor - - - - -	32,000
Raichoor - - - - -	1,20,000
Deodroog, &c. - - - - -	60,000
Copul Bahadur Bundry, &c. - - - - -	30,000
Mooski - - - - -	30,000
Goorgoonta - - - - -	20,000
TOTAL - - - <i>Rs.</i>	5,23,000

In fact, of the whole tract, with the exception of Kanukgerrie, Tawurgera, Mikulkoonti, Nel-loogul, Koosbheeh, &c., which are red or "mussub" soil, what the amount of produce may be it is impossible to say; but if the Shorapoor Sumusthan, which including jagheers and enam lands may be assumed as yielding an annual land revenue of five lacs of rupees, and has a cotton cultivation of beegas 67,145, according to the data assumed in paras. 18 and 19, then the above estimate would give, say 70,000 beegahs, which at the average assumed here, would yield about 11,720 candies of gross produce; I own that this is a vague and probably incorrect result; but as here the soil and products of districts are the same, as well as the mode of cultivation and character and habits of the people, and where cotton finds a more immediate sale for exportation than it does here, it seems fair to assume a proportion of produce in the form I have given it.

32. Of the cotton produced, that of Raichoor and its dependencies of Goboor and Murchire and of Deodroog to some extent, in fact of all those districts which lie near the Kistna, the greater part is sent to Muddoor, Jaumassett and Shumshabad, which are marts for general produce. The amount sent to these places is, I am credibly informed, nearly 4,000 bullock loads per annum, which again is sent to the north-east and east, to those districts of Telingana where cotton is not cultivated, but where it is required for local manufacturing consumption; a considerable quantity is required for the Gudwall district, where there are manufactories to a large extent, and for those districts farther to the eastward which border upon Kurnool.

33. The cotton of the more southern parts of this tract, that is, of the districts of Kowtal and Bhennoo, Capal, Jowalgeeree, &c., and the southern districts of Gelboorgah, &c., and goes principally to "Coompta" on the coast, *vid* Bellary, Dharwar, &c., and with the produce of the Bellary, Dharwar and other districts of the southern Mahratta country, it is known as Coompta cotton in the Bombay market. Merchants come from Coompta, Bellary, &c. with orders for cotton, and buy it up as they best can in the villages, or at district markets. They bring carts with them, on which the cotton is laden and despatched, and

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 29

I.
Bengal and
North Western
Provinces.

and the merchants usually accompany their goods, seldom or ever giving advances for future supplies.

34. The cotton of the more western and south-western parts of the Nizam's country, that is, of Mooshki and Moodgul, &c., is sent partly to Coompta, *via* Dharwar, and partly to Sunkeshwur near Kolapoor, and thence to Rajapoor on the coast, entirely on bullocks, at what rate of carriage hire, I am unable to ascertain.

35. Again, some of the Raichore, Deodroog, Gargoonta, &c. cotton comes to Shorapoor, and is sent with the Shorapoor cotton to Sunkeshwur or Rajapoor. The amount thus sent may be about 700 bullock loads per annum one year with another; this trade is entirely in the hands of the Lingaget Bunnias of these districts, who, having bullocks of their own, trade on their own account, or act as carriers for other merchants; no carts are used, nor are there any in the country.

36. The districts north of the Bheema, in which cotton is grown, are Gulbargah, Cheeta-poor, Afzulpoor, Allund, Gunjootee, Kuttee Marargee, Sohara, Nittoor, Nellinga, Bhalkee, &c. To some amount also in the neighbourhood of Nuldroog, Tuljapoor, and the districts of Bhurn and Daraseew, and others of the tract termed Bala Ghaut; of this portion of his Highness the Nizam's country, the cultivation of cotton prevails most in the first five talooks I have mentioned, but even in them it is not, I understand, so general, nor is the product so fine or so plentiful as in the Shorapoor Sumusthan, or in the districts south and south-west of Shorapoor beyond the Kistna.

37. There is no doubt, however, that there is a very large produce, and that the marts of Sholapoor, Barsee and Wyrag, are principally, if not entirely, supplied from these sources; and again, from the Nizam's districts about Oodgheer, Rajoora, Gunjakhair, and as far as Kandahar, which also produce and export large quantities of cotton. There is very little cotton, comparatively speaking, grown in the Sholapore collectorate, in which Barsee, the largest cotton mart in this part of the Deccan, is situated; by far the greater portion of what is known in the Bombay market as "Barsee" cotton being the produce of those districts of the Nizam's dominions north of the Bheema, which I have enumerated.

38. I have no data for the estimation of rent-charges, amount of produce, or cost of transit of the more distant districts; but on comparing accounts sent to me from Galburgah and Cheetapoor, with estimates I had made here, and which I have detailed, I found no material difference between them, except that the rent-charge in the Nizam's country is higher, in most instances, than that prevailing in the Sumusthan Shorapoor. On the other hand, the rate of bullock hire was less to Sholapoor and Barsee, which reduced the whole to about the general averages I have detailed. Translation of one of these memoranda is annexed to this Report, marked (B.).

39. Much more information, and of a more particular nature, possibly even to a register of the amount of cultivation in the Nizam's districts, I have mentioned, might be obtained from the local civil authorities, but without orders I have hesitated to address such, as I did not know personally, or to ask even those with whom I am acquainted, to give particular returns. Should, however, the point be considered desirable or important, and I should be authorised to do so, I shall be most happy to take measures to procure returns of the actual cultivation this year, and to direct the talookdars or their naibs, and the zemindars, to the best means of obtaining correct information, not only of produce, but of trade.

40. The price quoted at Bombay of "Barsee" cotton is generally the same, or nearly so, as that of "Compta." Thus it may be assumed that both are of the same quality; and as "Oomrawutee," or Berar is quoted about five Company's rupees per Bombay candy higher, it is evident that it is of a somewhat superior quality. Quality of cotton.

41. I have frequently examined the quality of cotton in various localities of the Sumusthan, and have observed considerable difference in it. That grown upon the ordinary rigur or black soil, which is connected with trap rocks or boulders, is of a rough, strong, but short staple; that, again, which is grown on lands in which limestone measures prevail is much superior, being longer in staple, and of a softer quality; and as the limestone tract is of great extent comparatively with the other, I should estimate that the produce of the latter would be at least as five to two of the former. No classification is, however, made by the dealers or merchants, who are probably unaware that any general difference exists.

42. The cotton grown is entirely of the native indigenous kind; and the same objections to it as to short staple, and in breaking of the dry leaves about the seed pod into the cotton, as well as of the thin shell of the pod itself at the time of gathering, exist here as elsewhere, where the same description of produce prevails, and which have been found so difficult to eradicate in the various cleaning processes resorted to in England. The only way to avoid this, and to pick the cotton clear of these incumbrances and dirt, would be to gather it early, and when the leaves and seed vessels are not quite withered. This, however, is not attended to; nor, indeed, unless the people could be assured of a constant demand, and possibly superior price, under the local purchases and directions of capitalists from Bombay (as has, I have understood, been accomplished to some extent in Berar), would they alter their present careless modes of proceeding.

43. I have made several attempts to introduce into the Sumuisthan the Bourbon and New Orleans seed, which has succeeded so well in the Southern Mahratta country, and made trials of both in limestone and trap black soils, but hitherto without success to any extent. The cotton succeeded very fairly upon the limestone soils, and when sown at the usual time of sowing there, that is, about August. Last year, however, there was a total failure of the crop on the land where the American cotton was sown, which has induced me, with a new supply of seed from Dharwar, to try it again this season, upon a different principle.

44. For last year I tried small portions both of Bourbon and New Orleans cotton in red gravelly soil, sowing them at the very commencement of the monsoon, and the result was more complete than I could have supposed. The plants grew to a height of upwards of six feet, the branches spreading laterally about three feet from the stem. They were vigorous and healthy, the branches weighed down by the weight of the pods and leaves; and the produce, both in amount and in quality of staple, far surpassed any that had been grown in black soils, and a later period of the monsoon. I beg to transmit with this Report a sample of the cotton thus produced. I have carefully saved all the seed of the Bourbon cotton, and this, with the New Orleans received from Dharwar, is now being sown, under my own superintendence, on red and mixed soils, which I have selected. The amount of cultivation will probably be 100 beegas, which will afford a fair proof of the adaptation of the cottons to the red soil, which has never hitherto been tried here for cotton. Should this trial be successful, I should not despair of being able gradually to introduce the cultivation of both kinds of cotton among the ryots, upon the red soils which now bear produce of an inferior quality and value.

45. But whatever may be done locally to improve the produce of cotton, whether by introducing new varieties of seed, or by the clean gathering of what exists, it is evident that little can be effected, either to increase the quantity or maintain a profitable price, unless a larger demand, whether market or a better outlet for the produce, can be provided; and this applies with equal force as well to the districts of Shorapoor as to the northward and southward of the Nizam's country.

46. So long as these districts are dependent upon bullock carriage only for transmission of produce, it is impossible, as you will have observed by the calculations I have previously given, that it can be transported to any great extent, or with adequate profit, upon bullocks only (and that at present is the only means of transport available either to Sholapoor or to the port of Rajapoor, in the Concan), or that these districts can compete with others more favourably situated in regard to easy communication with established marts. But did a metalled road exist from the nearest port on the western coast, upon which carts could travel at all seasons, I have no doubt whatever not only that demand would materially increase, but, as a natural consequence, the amount and the value of the produce.

47. In this respect I have looked with some anxiety to the result of opening the port of Viziadroog, or Gheria in the Concan (which it has been ascertained is safe for the reception of large ships at all seasons), by the construction of a road down the Phonda Ghât, which leads to it, and to the extension of that road to Beejapoor and Sholapoor. This, if accomplished, would afford a regular, and, at the same time, a cheaper and more rapid mode of conveyance of cotton than exists at present; for there is no doubt that as many carts in proportion to the produce would in a very short time be employed upon it as now ply between Sholapoor and Panwell at extremely moderate charges, and even more, as the cotton of the whole of the districts, and of those of the south-western districts of the Nizam's country, would speedily find its way to such nearest points in reference to these localities as would be struck by the ordinary carriers.

48. It is evident from the calculations I have given antecedently, which are based upon ascertained rates of hire, that a Bombay candy of cotton, costing here 53 Co.'s rupees, could, did a road exist, and carts were employed, be transported to Viziadroog, the distances being about the same, at the same rate as from Sholapoor to Panwell, that is, from 4½ to 5 Co.'s rupees, the same quantity costing 22½ Hyd. rupees, to reach Beejapoor on hired bullocks, which is probably about the same distance from hence as the new port of Viziadroog. Supposing that the rates were somewhat higher, say even 10 rupees per cartload of one candy, this would give 63 rupees as the cost of one candy at Viziadroog; leaving, at the rate quoted, 80 rupees per candy, 17 rupees profit, which could afford still greater increase of cost in transit or in local purchase, without loss. The cotton would be transported without that damage and dirt in loading and unloading which attend bullock conveyance, and it would have an advantage over that sent to Panwell, as it would be at once shipped for England, instead of having to bear the additional cost of boat-hire from Panwell to Bombay, re-landing at Bombay, and re-shipping for England.

49. Another advantage would be the saving of time, a great object. I do not hesitate to assert that a cart could travel three trips to and from the coast for two of any ordinary bullocks; and where a rapid return of capital is of undeniable importance to the farmer, as well as to the capitalist or merchant, this is an advantage not to be overlooked or underrated. Cotton here ripens, and is gathered from the end of March to the middle and end of April; consequently there remains little more than a month in which it can be cleaned and sent to the coast, or to the market where it finds sale. The consequence of this is, that comparatively little of the season's produce is immediately exported, or brings
return

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 31

return to the grower, but remains either in possession of the farmer, to be cleaned and sold as his necessities urge him to dispose of it, or, if in that of the local merchants, to be stored, gathering dirt and dust; thus becoming depreciated in value, while his capital is also tied up and unemployed.

I.
Bengal and
North Western
Provinces.

50. It is, therefore, if assistance to the cotton cultivation and to the trade be really desired by Government, most necessary to improve the means of transport in the first instance; and there could be no doubt that, were this effected by the opening of a road, increased produce, increased value, and quality of produce, would follow as a matter of ordinary course. I do not speculate upon the effect of the influx of capital, or upon the stimulus which judiciously supplied advances to farmers might have upon the increased growth of cotton; but I believe that these would be attended by ultimately beneficial results; for cotton merchants, whether European or native, would naturally follow where an opening had been made, and, where evident profit was to be obtained.

51. On many other grounds the opening of a good road direct from the coast to Beejapoor would be of vast importance to the interests of the country it would pass through, and to all those districts which lay adjacent to it; but it would materially enhance the benefit if it could be prolonged from Beejapoor in a direct line to Hyderabad. In this case it would pass through the north-western districts of the Shorapoor State,* which produce a great part of the cotton of the country, and, crossing the Bheema about Ferozabad, would traverse part of the Galburgah and Cheetapoor talooks, which also produce cotton; while the districts on each side would all contribute their quotas of the same and other produce to general traffic. Nor would this be the only benefit. Grain, now frequently taken towards the coast by the Brinjaries in their journeys for salt, could be transmitted by the same road, oil-seeds, hemp, tobacco, madder, &c., all with profit, upon carts. There would be a continual return-trade, and a very profitable one, not only to these districts, but to the mart of Hoomnabad, and thence to Domraotee in Berar, for such is the usual channel of trade, not only in kerana or groceries, but in salt. The latter is now entirely in the hands of the Brinjaries, whose importations are by no means adequate to the general consumption of the population, as is evident from the quantity of indifferent bitter salt made in the country, and usually consumed by all classes.

* The Talooks of
Andola and Nel-
loogee.

52. In regard to this line, which, as it would connect Hyderabad with the coast by a comparatively direct road, and also meet the present existing line from Masulipatam, I believe it may be said of its entire length that it passes over a level, or, at most, undulating country, in many parts over red soil which would be inexpensive to work, and very durable when made, and that where metalling was required excellent material is to be found, both kunkur and moorum, for the same purpose. By connecting Beejapoor, a central position, with Sholapoor on the one hand, and these districts, Cheetapoor and Hyderabad, on the other, there could be little doubt that the whole of the trade outwards in cotton, and inwards in groceries and British manufactures, metals, &c., would be greatly facilitated, accelerated, and, I believe sincerely, increased also.

53. In regard to British manufactures I need hardly perhaps state what will be evident on consideration, that the general absence of trade and connexion with the coast prevents their being brought into the country; that there is a very small consumption of them; nor are ordinary cloths usually to be obtained even in those large towns, villages, and even districts where their consumption would be insured if trade existed. With the exception of Sholapoor and Galburgah, the latter on account of its being a military station; possibly Narrayenpett, and Hoomnabad, and Shorapoor, to a small extent; Singsoogoor, since it has been a military station, I know of no other places in the vast and populous tracts of which they form as it were centres, in fact, within the area comprised between Sholapoor, Hyderabad, Kurnool, Bellary, Kulladghee, and Beejapoor, where English manufactures are ordinarily consumed, or are procurable, though they seem universally desired in preference to any other by the male population, and are worn whenever they can be obtained.

54. I need not, however, pursue this subject, which is capable of great extension, and, indeed, have to apologise for introducing it into the present report. I believe it, however, to have direct reference to the benefit and extension of the cotton trade, and of trade in general, and unquestionably advantageous to the general interests and prosperity of the country and the people at large, and on these grounds desire that the results of my own local observation and experience should meet the consideration of Government with those of other parties whose attention may have been attracted to the subject.

I have, &c.

(signed) Meadows Taylor,

Shorapoor, 23 June 1848.

On Special Duty.

(A.)

RETURN of COTTON CULTIVATION in 327 Villages of the Shorapoor Sumasthan, 1257 Fuslee, A. D. 1847-48.

NAMES of TALOOKS.	Number of Villages.	Number of Fields.	Amount of Beegas.	Cooroo, at 30 Beegas per Cooroo.	Produce per Cooroo.				Deduct Seed at 10 Mau. per Candy.	Remainder cleaned Cotton.	Value at 40 Hyderabad Rupees per Candy.	
					At 5 Gross Candies per Cooroo.	At 4 Gross Candies per Cooroo.	At 3 Gross Candies per Cooroo.	Averages.			Rs.	a. p.
1. Andola - - -	39	674	7,980	266	1,330	1,064	798	1,064	744 14	319 4	12,768	- -
2. Nalloogee - - -	57	820	5,955	198	992	794	595	794	555 16	238 4	9,528	- -
3. Warrageeree - - -	24	361	2,572	85	428	343	257	343	240 2	102 18	4,116	- -
4. Korkul - - -	12	153	1,642	54	273	219	164	219	153 6	65 14	2,628	- -
5. Byehbal - - -	4	62	142	4	23	19	14	19	13 6	5 14	228	- -
6. Kembaree - - -	46	364	3,720	124	620	496	372	496	347 4	148 16	5,952	- -
7. Maluai - - -	17	472	1,975	132	662	530	397	530	371 -	159 -	6,360	- -
8. Malgettee - - -	1	3	30	1	5	4	3	4	2 16	1 4	48	- -
9. Koonayee - - -	12	106	840	28	140	112	84	112	78 8	33 12	1,344	- -
10. Surwall - - -	6	317	2,692	89	448	359	269	359	251 8	107 14	4,308	- -
11. Muddirkee - - -	50	369	3,615	120	602	482	361	482	337 8	144 12	5,784	- -
12. Dewapoor - - -	10	113	720	24	120	96	72	96	67 4	28 16	1,152	- -
13. Hemnoor - - -	22	341	2,700	90	450	360	270	360	252 -	108 -	4,320	- -
14. Rustapoor - - -	26	388	2,670	89	445	356	267	356	249 4	106 16	4,272	- -
15. Suggar - - -	1	1	90	3	15	12	9	12	8 8	3 12	144	- -
	327	4,553	39,345	1,311	6,557	5,246	3,934	5,246	3,672 4	1,573 16	62,952	- -

Shorapoor, 24 June 1848.

(signed) Meadows Taylor.

(B.)

TRANSLATION of Memorandum regarding Cotton from Galburgah.

1 Gross candy of cotton with seed, 240 seers produces—
6 mau. of cotton.
14 mau. of seed.
20 mau. or 1 candy.

Cost of cleaning, *Hyd. Rs.* 2. 8. per candy.

Result:

Value of the above:									
6 mau. of cotton, at <i>Rs.</i> 2. 4.	-	-	-	-	-	-	-	-	13 8 -
14 mau. seed	-	-	-	-	-	-	-	-	1 13 -
Total	-	-	-	-	-	-	-	-	15 5 -

Detail of one bullock load of cotton from Galburgah to Sholapoor:

1 bullock load, 10 mau. at <i>Rs.</i> 2. 4.	-	-	-	-	-	-	-	-	22 8 -
Bullock hire to Sholapoor	-	-	-	-	-	-	-	-	1 8 -
Duty and village dues	-	-	-	-	-	-	-	-	1 8 -
Sacking cloth	-	-	-	-	-	-	-	-	1 8 -
									<i>Hyd. Rs.</i> 27 8 -*
									or <i>Co.'s Rs.</i> 22 8 -

Detail of one bullock load of cotton from Galburgah to Shorapoor:

One bullock load, at <i>Rs.</i> 2. 4.	-	-	-	-	-	-	-	-	22 8 -
Bullock hire	-	-	-	-	-	-	-	-	1 8 -
Duty, &c.	-	-	-	-	-	-	-	-	1 8 -
Sacking	-	-	-	-	-	-	-	-	1 8 -
									<i>Rs.</i> 27 8 -*

Detail

* *N.B.*—There is some error in the originals throughout these statements.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 33

Detail of a bullock load of cotton from Gulburgah to Tandoor:

	Rs.	a.	p.
One bullock load, at Rs. 2. 4.	22	8	-
Bullock hire	1	8	-
Duty, &c.	1	-	-
Sacking	1	8	-
	Rs.	26	- - *

I.
Bengal and
North Western
Provinces.

N.B.—The sacking should not be charged, as the bag is usually brought back, the cotton being weighed out, and repacked in other bags.

The calculation of a cost of a bullock load of cotton from Gulburgah to Sholapoor, as here detailed, shows, without—

Sacking cloth	- - - - -	Hyd. Rs.	26	- -
Estimate from Shorapoor, as per para. 12	- - - - -		26	- - *

(True copy).

(signed)

J. Low,

Officiating Resident.

Question. 1. WHAT is the price of cotton, freed from seed, in the principal mart or marts in your district?

Answer. At Oomrawutee about 54½ rupees per kandy of 750 lbs. avoirdupois; at Kaumgaum about 20½ rupees per pullah of 240 lbs.

Oomrawutee and Kamgaum are the two great marts for cotton in Berar. From the former a large quantity of cotton is exported to Mirzapore, as well as to Bombay. The reason that the cotton is exported to Mirzapore in preference to Bombay, though the land journey is much longer, is to avoid the extremely heavy and arbitrary duties levied upon it and every other species of merchandise passing through the Nizam's territories, and which are avoided in going to Mirzapore, as the road crosses the frontier about 30 miles from Oomrawutee, and enters the Nagpore country.

2. At what price does the ryot sell his cotton, cleaned or uncleaned, and with or without advances?

2. The ryot sells his cotton both cleaned and uncleaned, and at about one rupee per pullah of 240 lbs. avoirdupois below the market price, and chiefly to the mahajuns, who clean it and sell it again in large quantities to the purchasers for the foreign markets. An advance is always made, and from this advance arises one of the great evils of the cotton trade. The money having been advanced by the purchasers, who buy the cotton in large quantities for exportation, they are obliged to take whatever produce is brought to them or lose their money, and the mahajuns, who are the principal cleaners of the cotton, and the ryots who cultivate it, knowing this, mix with the clean and good cotton all sorts of rubbish, and the bad and inferior cotton of the last year, which admixture can never be again entirely separated; and this it is that makes the Berar cotton so much inferior in the market price to the Surat cotton, to which it is, when properly cultivated and gathered, hardly inferior. The cultivators, again, when they have received advances, are frequently not allowed to gather the cotton in small quantities as the pods ripen, but are obliged to wait until the crops have been assessed, and by this time much of the cotton is frequently spoiled by the pods falling off, and dry leaves, &c. getting mixed with them.

I may here add, also, as regards the price the ryot sells his cotton at, that the large number of coins, especially copper, current in the Nizam's territories, is a great hardship upon the cultivator, as enabling the tax collector, &c. to extort, under the pretence of the coin being of an inferior description, almost any amount they choose.

3. What is the expense of cleaning cotton by the churka, or by any other method they may use?

About 2½ to 3 rupees per pullah of 240 lbs. 1½ kandy (each kandy 778 lbs. avoirdupois) uncleaned will yield a pullah of 240 lbs. cleaned cotton. The cotton seed, after separation, sells for about 3½ to 4 rupees per kandy.

4. What are the expenses of conveying cotton to the nearest point for shipment?

From Oomrawutee the cotton is principally conveyed either north-east to Mirzapore, or south-west to Bombay by brinjaries, at a contract price, which however varies greatly, according to the quantity of rain the preceding season, affording fodder for their bullocks or not. A bullock load is 120 seers of 80 rupees, of 172 grains weight, or about 2 lbs. avoirdupois, and the hire is per bullock load; to Bombay in the cold weather four rupees, in

* See note on preceding page.

I.
Bengal and
North Western
Provinces.

in the dry weather 5½ rupees, and in the wet weather seven rupees. Few carts, except the common native carts, with solid wooden wheels and axles are employed in Berar, as there are no made roads, and they are only used between village and village.

5. What is the average produce of cotton per beegah, or acre?

A beegah of about 150 feet square in an average year will produce of kupas, *i. e.* cotton and seed together, nearly ⅓ kandy of 778 lbs.

6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried in the event of an increased demand.

I have not the means of accurately answering this question, but the average export of cotton a few years ago from the north and west of the Nizam's dominions was about 25,000 kandies. The cotton cultivation has of late years fallen off very considerably, and whenever I have asked the ryots why land which I had seen under cotton cultivation was planted with jowaree or other grain, they have invariably replied, that the cotton cultivation did not now pay them, if they cultivated it properly, allowing the land to be fallow every second or third year (cotton should only be grown every second or third year, according to the soil), and the restrictions as to gathering it, and the necessity they were under of selling it to the people who had made them advances, together with the high arbitrary duties, and the difficulty of transporting it, when gathered, were so oppressive, that they preferred cultivating any other crop; should however these restrictions be removed, it would be difficult to say to what extent cotton might not be cultivated in Berar.

(signed) R. Dorin, Captain,
On Special Duty.

(True copy.)

(signed) J. Low, Officiating Resident.

Question 1. WHAT is the price of cotton, freed from seed, at the principal mart or marts in your district.

Answer. In the chief mart in Western Berar, Khamjam, it is at present Hyderabad Rs. 17½ per pullah of about 240 lbs. avoirdupois, but it thus fluctuated from 1840 to 1846, from 16 to 30 rupees the pullah.

2. At what price does the ryot sell cotton, cleaned or uncleaned, with or without advance?

This depends entirely upon the state of the market; I have known it fluctuate from 15 rupees the khundee of kupas (cotton with the seed) to 25 rupees the khundee; one and a quarter kundee of kupas is calculated to produce one pullah of cleaned cotton. The ryots generally sell their kupas to village muhajuns (bankers) who are most of them also cotton dealers, from whom they receive early advances, at 2 and per mensem, according to the reputation of the borrower; they also contract to deliver it after being freed from seed, some of them, however, bring their cotton, both cleaned and uncleaned, to the market themselves.

3. What is the expense of cleaning cotton by the churkha or foot-roller, or by any other method?

In Western Berar, and throughout the province generally, the cotton is cleaned by the hand churkha, at which two women are employed; the cost of cleaning is about 2½ rupees per pullah of 240 lbs. of cleaned cotton; one khundee of kupas weighs 778 lbs.

4. What are the expenses of conveying cotton to the nearest port?

The whole of the cotton produced in Western Berar and Ballaghât, and a large portion of that of Eastern Berar, is exported to Bombay through khundies, and *via* Moongeepytun and Ahmednuggur. The expense of conveyance fluctuates very considerably; I have myself paid from 2½ rupees to 12½ rupees for the pullah, but these were extreme cases. From five rupees to eight rupees the pullah may be considered the common rates.

5. What is the average produce of cotton, per beegah or acre?

I am unable to answer this query from my own knowledge, but one beegah of 150 feet square, is supposed to yield three khundeeds of kupas.

6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried in the event of an increased demand?

I am unable to answer the first part of this query. With regard to the latter, having for many years at different times been engaged in the cotton line of business in the Wurdha districts, and in Western Berar, I may say from personal observation, that the cultivation of cotton in the province might be extended almost to an unlimited amount.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 35

In 1824-25 only 2,000 ^{7 2 1/2 lbs.} pullahs of cotton were despatched from Khâmgâm to Bombay. In 1841 about 1,20,000 pullahs, equivalent to 23,800,000 lbs. were exported from Western and Eastern Berar, and Berar Ballaghât, to Bombay; besides what may have been sent to Mirzapore, on the Ganges from Oomrawuttee; by this increase alone, even under many seriously discouraging circumstances, it may be easily anticipated to what extent the growth of cotton could be augmented under due encouragement and protection.

(signed R. H. Fenwick, Capt.
His Highness Nizam's Pension Estabt.

(True copy.)

(signed) J. Low, Officiating Resident.

I.
Bengal and
North Western
Provinces.

REPLIES to the Queries proposed by the Government of India, given by Pestonjee Viccajee, regarding the Cotton Trade, &c. in the Nizam's Country.

Query 1. What is the price of cotton, freed from seed, at the principal mart or marts in your districts.

Reply. There are two principal marts in the Berar zillah, Khamgaum and Oomrawuttee; to the former are attached the petty marts of Akoot, Argaum, Jalgaum, Malkupoor, Jamode, &c. and to the latter those of Karanjah, Kullagaum, Maholee, Nandgaupett, &c.; the dealers of Khamgaum purchase cotton freed from seed at prices averaging in cheap seasons from *Hyd. Rs.* 15 to 20 per pullah of 120 Indian seers or 240 lbs., and in dear seasons from *Hyd. Rs.* 25 to 35 per pullah; these prices are however determined and vary according to the produce of cotton in several countries, and the state of the markets at Bombay and Mirzapore, to the former of which the larger exportation, and to the latter the smaller, is made. Besides the Berar zillah, there are other small marts in Basmut and Madnar, &c. and a large mart at Gangavutty in the Raichore talooka, where also the dealers purchase cotton.

2. At what price does the ryot sell his cotton, cleaned or uncleaned, and with or without advances?

The ryots do not sell cleaned cotton, but only uncleaned, with and without advances; of the uncleaned cotton mixed with seed, there are three different sorts, the value of which in cheap seasons is from 11 to 15 Hyderabad rupees per pullah, a pullah of which when cleaned and freed from seed, leaves of cleaned cotton from one-half to three-quarters pullah; the dealers who make advances purchase the cotton from 8 to 12 annas per pullah cheaper than the above rates.

3. What is the expense of cleaning cotton by the churkha or foot-roller, or by any other method which may be in use?

In Berar zillah the cotton is cleaned by country churkhas, and the expense of cleaning one pullah mixed with seed is from 14 Hyderabad annas to *Rs.* 1. 2. per pullah, the seed itself being also delivered to the dealer, but no charge is made when the cleaners are allowed to retain the seed, because the value of the seed is estimated to be equal to the above rates for cleaning.

4. What are the expenses of conveying cotton to the nearest port for shipment?

From the principal marts of Khamgaum and Oomrawuttee, and their subordinate marts, the cotton is conveyed to the bunders of Panwell and Cursellis, in the Bombay Presidency, at the hire of four to five Hyderabad rupees per pullah from the former, and at six to seven Hyderabad rupees per pullah from the latter and their subordinate marts; in addition to which a charge of 12 Hyderabad annas to one rupee per pullah is incurred in packing the cotton, independent of the transit duties (rahdaree) within his Highness's territories, charged at several stations of the Sircar, and other stations belonging to jagheerdars, and the right (wiswa) of Moourddum and the watcher at night, &c., which all amount from one to one and a half Hyderabad rupees per pullah, exclusive of the custom charged in the Bombay Presidency.

5. What is the average produce of cotton per beega or acre?

For a very long time past no system has obtained of measuring and surveying the land in his Highness's territories, and the fields for the several products are not separate, the cultivators growing cotton and grain in their respective fields together and indiscriminately, as their inclination or interest dictates; consequently no correct information can be given on the subject.

6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried, in the event of an increased demand?

It cannot be correctly ascertained, for the reasons given in the above reply, what quantity of land is under cotton cultivation; but in the event of an increased demand, and the

J.
Bengal and
North Western
Provinces.

measurement and survey of the land being made, and a proper rate fixed agreeably to the description of the several lands according to the estimated produce for the Government tax payable by cultivators, which at present and for a long time past is at several places unreasonably very high, and in other places unreasonably very low, there is every hope that the present produce would be doubled.

Hyderabad, 17 February 1848.

REPLY to the *Nota Bene*.

An acre is equal to 4,840 square yards.

There is no measurement of land by beegas, but a beega is equal to 4,444½ square yards.

One pullah is equal to three Indian maunds, or 120 Indian seers, and one Indian seer equal to the weight of 80 Co.'s rupees.

The exchange between Hyderabad and Co.'s rupees (by the former of which the cotton dealing is carried on in the Nizam's country) depends upon the state of money markets at several places. However, the probable rate for 100 Hyderabad Chulnee rupees is 84 Co.'s rupees.

(True copy.)

(signed) *J. Lowe*,
Officiating Resident.

Ordered, that a copy of the above despatch be sent to the Home Department (Revenue), with reference to the extract from that department of 15 January last, No. 20; for communication to the Honourable the Court of Directors.

(A true extract.)

(signed) *P. Melvill*,
Under-Sec. to the Govt. of India.

Home Department, Revenue.—(No. 18 of 1848.)

To the Honourable the Court of Directors of the East India Company.

Honourable Sirs,

IN continuation of our letter No. 16, dated the 12th ultimo, we have the honour to forward the accompanying copy of a communication from the Deputy Commissioner of Seonee, containing information as to the price of cotton, and the extent to which it is cultivated and can be cultivated in that district.

We have, &c.

(signed) *Dalhousie*,
F. Millet,
J. H. Littler.

Fort William, 11 September 1848.

(No. 4127 A. of 1848.)

From *C. Allen*, Esq., Officiating Secretary to Government in the North Western Provinces, to *G. A. Bushby*, Esq., Secretary to the Government of India, Home Department, Fort William.

Sir,

IN continuation of my letter No. 3966 to your address, dated the 28th July last, regarding the cotton cultivation in India, I am directed by the Honourable the Lieutenant-governor to transmit to you, for the purpose of being laid before the Right honourable the Governor-general of India in Council, the accompanying copy of a letter No. 87 from the Commissioner of the Saugor and Nerbudda Territories, dated the 3d instant, with its enclosure on the subject.

Agra, 12 August 1848.

I have, &c.

(signed) *C. Allen*,
Offg. Sec. to Government, N. W. P.

Revenue Department.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 37

I.
Bengal and
North Western
Provinces.

(No. 1 in No. 4127 A. of 1848.)—(No. 87 of 1848.)

From Lieutenant-Colonel *W. H. Sleeman*, Commissioner of the Saugor and Nerbudda Territories, to *C. Allen*, Esq., Officiating Secretary to Government, North Western Provinces, Agra.

Sir,

IN continuation of my letter No. 82, of the 19th ultimo, I have the honour to submit the Revenue. copy of a letter No. 49 of the 18th idem from the Deputy Commissioner at Seonee on the subject of the cultivation of cotton.

Jhansee, Commissioner's Office,
3 August 1848.

I have, &c.
(signed) *W. H. Sleeman*,
Commissioner.

(True copy.)

(signed) *C. Allen*,
Offg. Sec. to Govt., N. W. P.

(No. 2 in No. 4127 A. of 1848.)

(No. 1 in No. 87 of 1848.)—(No. 49 of 1848.)

From Captain *H. Wakeman*, Deputy Commissioner, 2d Class, to Colonel *W. H. Sleeman*, Agent Governor-General, Jhansie.

Sir,

IN reply to your letter to the address of my predecessor, under date the 14th February 1848, No. 61 and its enclosures, respecting cotton, I have the honour to state as follows:

1. The price of cotton, freed from seed, are sold at five Nagpore rupees per maund of 40 seers, of 80 kuldars each.
2. The ryots sell their cotton as above, cleaned, with and without advances.
3. The expense of cleaning cotton by the churka is 10 Nagpore annas per maund.
4. The expense of conveying cotton to Mirzapore is three Company's rupees per maund.
5. The average produce of cotton per acre is six maunds.
6. The quantity of land under cultivation with cotton is 6,000 acres, and the extent can be cultivated to 9,000 acres only.

Seonee, Office of Deputy Commissioner,
18 July 1848.

I have, &c.
(signed) *H. Wakeman*,
Deputy Commissioner, 2d Class.

(True copy.)

(signed) *W. H. Sleeman*,
Commissioner.

(True copy.)

(signed) *C. Allen*,
Offg. Sec. to Govt., N. W. P.

Home Department, Revenue.—(No. 6 of 1849.)

To the Honourable the Court of Directors of the East India Company.

Honourable Sirs,

IN continuation of our despatch, No. 18, dated the 11th September last, we have the honour to transmit the accompanying reports received from the several districts of the North Western Provinces, containing information required by your Honourable Court regarding the cultivation of cotton in India, together with a general statement prepared by the Sudder Board at Agra, exhibiting in a concise form the information thus obtained. A letter from the Board communicating their observations on the subject, also accompanies.

We have, &c.
(signed) *J. H. Littler*.
F. Currie.
J. Lewis.

Fort William, 19 May 1849.

I.
Bengal and
North Western
Provinces.

(No. 1500 of 1849.)

From *C. Allen*, Esq., Officiating Secretary to the Government North Western Provinces to *F. J. Halliday*, Esq., Secretary to the Government of India, Home Department, Fort William.

Revenue Department.

Sir,

IN continuation of my letter, No. 4127 A., to your address, dated the 12th August last, regarding the cotton cultivation in India, I am directed by the Honourable the Lieutenant-governor, to submit to you for the purpose of being laid before the Honourable the President in Council, the accompanying copy of a letter No. 92, from the secretary to the Sudder Board of Revenue, dated the 27th February last, with its enclosures, on the subject.

I have, &c.

(signed) *C. Allen*,

Offg. Secy. to Govt., N. W. P.

Agra, 28 April 1849.

(No. 1 in No. 1500 of 1849.)—(No. 92 of 1849.)

From *William Muir*, Esq., Secretary Sudder Board of Revenue, North Western Provinces, to *C. Allen*, Esq., Officiating Secretary to Government in the North Western Provinces.

Sir,

Revenue.
Present:
H. S. Boulderson,
esq., junior mem-
ber.

COPIES of the order of Government No. 529 of 12th February 1848, having been forwarded to all the commissioners of divisions in the North Western Provinces, the Sudder Board of Revenue, North Western Provinces, have received in return the reports herewith submitted, showing the cost of cultivating, cleaning, and exporting cotton, and the extent to which the cultivation may be increased.

2. Excepting Saugor, the reports of which division were forwarded to Government direct, a general statement exhibiting the information supplied from all the districts of these provinces has been prepared in this office, and accompanies the separate returns. The Board direct me to offer also the following general observations for the consideration of his Honour the Lieutenant-governor.

Area cultivated.

3. The area cultivated for cotton is reported at 10,02,040 acres, which may it is estimated be extended to 16,89,662 acres; but this includes territory which affords no supplies for Europe; the exports being derived from a tract which extends no higher within the Doab than Allyghur, but in the south-western side or right bank of the Jumna, includes districts of the Allahabad, Agra, and Delhi divisions, as far as Rohtuck, which contains important marts. Exportation is also spoken of as taking place from Rohilcund, but it seems to be limited to the western portion of Budaon, and to the mart of Chundouse in Moradabad, and as the article produced is of inferior quality, Rohilcund may be left altogether out of the account. The more northern and western districts in the plains in which cotton is grown, generally require it for their own consumption, or for places in their vicinity, or when there is a surplus it is exported to the states westward. The hill districts on the north produce little or none; and with respect to the remaining division of Benares, however well situated it is as respects exportation, and whatever may in future be effected in realization of the Commissioner's expectations, various prejudices have hitherto operated against its natural advantages, so that the quantity it at present yields is insignificant.

4. The more productive of the exporting districts (*vide margin* *) have 8,29,753 acres under cultivation, which it is stated may be extended to 14,74,801 acres, and if the Benares division

	ACRES.	ACRES.
*Rohtuck - - -	14,552	18,750
Ganjam - - -	29,617	35,418
Allyghur - - -	69,050	69,050
Moradabad - - -	50,000	1,00,000
Budaon - - -	34,091	79,489
Agra Division - -	2,83,156	5,04,881
Allahabad Division -	3,49,287	6,67,213
TOTAL - - -	8,29,753	14,74,801

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 39.

division be added, the extension will be from 8,34,669 to 14,93,040. Whether any further addition should or should not be made is a question. The district officers consider the soil itself unsuited to the cultivation, but the Commissioner seems to doubt the fact as respects zillah Goruckpore. His observations are here quoted for facility of reference.

Bengal and
North Western
Provinces.

Remarks by Commissioner of Benares in Letter No. 235, dated 16 August 1848,
Para. 13.

"In this division the cultivation of cotton is little more than nominal. We have these facts before us, that 30 years ago, poppy cultivation in this district was considered a dubious speculation, and that not only do Government now gain nearly 30 lakhs of rupees by present operations, but all classes of people, even Brahmins, have put their hands to it, and that only 12 years ago the sugar-cane was limited to one portion of the district, and superstitious objections by native agriculturists has despite of subsequent temporary over-speculation and its evils, resulted in marvellous success, dissipating the heavy anxiety of financial pressure from a rapid increase of assessment to the extent of 15 lakhs of rupees."

5. Several documents which accompanied the Commissioner's Report offer important information, as respects Goruckpore. But whilst the Commissioner agrees with the Collectors of the other districts as to the unsuitable nature of the soil, it may be found that this difficulty has no real foundation. On this point the Board beg to direct attention to the following remark of Mr. Pearson, deputy collector at Calpee.

Para. 7.—Extract of Letter, No. 50, dated 9 June 1848.

"As, however, no kind of land is unsuitable for the purpose, except such as is low or exposed to inundation, there can be little doubt that if an increased demand should raise the price of the article, a much greater extent of land might be devoted to its production."

6. The opinion of Mr. Bruce, uncovenanted deputy collector at Cawnpore, whose experience is known to the home authorities, may also be thought worthy of special notice. He observes, that under certain conditions and encouragements he would undertake to produce as much good merchantable cotton as may be required, and not to cost, when landed in England, more than 3 ½ d. per lb. In his opinion there is no difficulty whatever as to the means of extending the cultivation.*

7. The price of cotton at the principal exporting marts varies from Rs. 5. 15. 3. in Gurgaon to Rs. 10. 6. 5., the rate for the ordinary maund of the best description in Furruckabad. The average of all these marts is a little above eight rupees.† The average price of cleaned cotton realised by the ryot is Rs. 7. 14., or, when he receives advances, Rs. 6. 11. But the system of making advances is not general, though it apparently reduces the cost from three per cent. in some districts, to 10 in others. When the East India Company's investments were provided, purchases were not, it seems, made by advances, and there is no encouragement offered to have recourse to that method now.

8. The price of the uncleaned cotton with the seed as sold by the ryot, varies from two rupees to Rs. 2. 8. per maund.

9. The churkee is the instrument invariably employed by the natives to free the staple from seed, after which remaining impurities are separated by the bow (dhunne), though the latter process does not appear to be resorted to for cotton shipped to Europe. The practice very generally is to give the seed, or a portion of it, as remuneration for cleaning; but where money is given it ranges from six annas per maund to above a rupee, the weight of the cleaned article being understood, and the usual proportion being a maund of clean cotton to three maunds of seed; that is, four maunds of cotton with the seed yield one maund of clean staple. This item of charge may perhaps be reduced by the introduction of the machine in the improved form recently given to it by European inventions.

10. Very different estimates have been given of the cost of transport to Calcutta, the only port for shipment. Thus the Budaon return fixes it at 10 a. 10 p., and that of Furruckabad at only 8 a. 4 p. But the mere carriage forms only a proportion of the actual charge, and therefore such estimates as Rs. 2. 14. (Koonah *via* Calpee) are given from some of the districts. The greatest part of the exported cotton changes boats at Mirzapore, the charge

* Extract para. 7, No. 52, dated 15th March 1848. "If the associations and manufacturers who have been memorialising and soliciting the authorities in England regarding the increase of cultivation of cotton in India, actually wish for it, and will guarantee that all that may be produced through my exertions in this country, will be taken by them, and paid for here, and will send out responsible agents to receive charge of the cotton either here or at Calcutta, I will engage and undertake to produce for them as much real good merchantable cotton as they may require, and not cost them when landed in England, more than about 3 ½ d. per lb., which I think very moderate, considering the Indian cotton generally realises from 4 ½ d. to 5 ½ d. per lb. in England."

† This at 1 s. 10 d. per rupee, is at the rate of 2.1 pence per lb. for cleaned, but unscreened cotton.

I.
Bengal and
North Western
Provinces.

charge from which place is uniformly given at Rs. 1. 4. per maund, including every item, thus:—

	Rs.	a.	p.
Boat-hire and churrundur (servant in charge)	-	7	6
Insurance	-	4	-
Insurance office peon (guard)	-	-	9
Pilotage, &c.	-	1	-
Agent's commission	-	-	9
Hoondean (premium on drafts)	-	5	6
	Rs.	1	4

This sum has of course to be added to that of such returns as give the charges only to Mirzapore.

As examples of the charges previously incurred, the information supplied by officers at some of the greater marts is here given:—

	Rs.	a.	p.
From Cawnpore to Mirzapore, including every charge	-	1	-
From Agra to Mirzapore (duty added to the return)	-	1	-
Ditto Humeerpore, average of different marts, ditto ditto	-	1	1
Ditto Banda, carriage and duty	-	14	3
Ditto Calpee, all charges included (cotton previously brought from Koonch), bears a further charge of 6 a. 7 p.	-	1	4
Ditto Allahabad to ditto, carriage, insurance and duty	-	9	7

The following charges are included, taking Calpee as the instance:—

	Rs.	a.	p.
Brokerage	-	-	3
Weighing and portorage	-	-	3
Packing and thread	-	-	3
Portorage to ghat	-	-	3
Commission of agent	-	-	9
Boat-hire and churrundur (servant in charge)	-	4	-
Government duty and Durkhast nuvees	-	9	9
Hoondean	-	1	6
Insurance and peon	-	1	9
Gomashta and peon	-	1	6
	Rs.	1	4

The cost is somewhat increased to the trader in cotton grown on the right bank of the Jumna, as he has in most instances to pay the duty before his despatch reaches the ghaut, which has the effect of multiplying the number of his transactions, and taking a part of his capital out of his hands for a period not required in the other cases.

The cost then to Calcutta may be reckoned—

	Rs.	a.	p.
Price in mart per maund	-	8	-
Charges to Mirzapore	-	15	7
Ditto from Mirzapore to Calcutta	-	1	4
	Rs.	10	3

This gives a cost in Calcutta, taking the maund at 80 tolas, and the rupee at 1 s. 10 d., of 2.733 pence per pound.

The Board cannot but observe, that in most of the discussions in England, touching both cotton and sugar, there appears a silent assumption that the produce of both these articles must be sent to England, and that there is little or no sale for either in this country.

At the time when the Company's investments were provided, and afterwards, when large shipments were made to China, the price of cotton in the Agra market used to be from 12 to 15 rupees per maund; and though there can be no doubt whatever that there would be a rapid extension of cultivation of cotton were the demand to increase, the price would so much rise by the export, as considerably to check the latter.

By the occupation of more land for cotton also, some grain production must be abandoned. The rise in the price of grains would tend to diminish the comparative profit of extending cotton culture.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 41

12. The information supplied by the local officers in regard to weights and measurements gives throughout the area of land in acres. The maund is always one of 40 seers, and the seer is usually one of 80 tolahs. The exceptions in the latter case are the following:—

Muzuffurnuggur - - - - -	72 tolahs, 15 per cent.
Moradabad - - - - -	100 " 25 "
Bareilly, 125 lbs. troy.	
Furruckabad - - - - -	96 " 20 "
Etawah - - - - -	102 " 27½ "
Cawnpore - - - - -	97 " 21¼ "
Futtehpore - - - - -	96 " 20 "
Humeerpore - - - - -	96 " 20 "
Allahabad - - - - -	100 " 25 "
Calpee - - - - -	96 " 20 "

I.
Bengal and
North Western
Provinces.

13. The cost of the article, and the rate of charges must, in these cases, be correspondingly reduced. In Allahabad, a further allowance is made of seven per cent. being given on the punseree (five seers) weight as for a wholesale transaction; but whether this allowance is made elsewhere on cotton does not appear.

I have, &c.

Sudder Board of Revenue, N. W. P.,
Agra, 27 February 1849.

(signed) W. Muir, Secretary.

(True copy)

(signed) C. Allen,
Offg. Secy. to Govt., N. W. P.

(No. 1½ in No. 1500 of 1849.)—(No. 219.)

From Sir *Theophilus Metcalfe*, Bart., Commissioner, Delhi, to *W. Muir*, Esq., Secretary
Sudder Board of Revenue, North Western Provinces, Agra.

Sir,

I HAVE the honour to acknowledge your docket, No. 49, dated 16 February, with enclosures from the Secretary to the Government, North Western Provinces, and from the Secretary to the Government of India, requiring replies to certain queries as to the extent to which India might be capable of supplying cotton in the event of an increased demand for it.

2. The replies of the several district officers of my division are herewith submitted.

3. As the information required has been supplied in various forms, I deem it necessary to annex a tabular statement showing at once the numeral answers to the several queries opposite each district. A reference to the reports of the district officers will show in detail all else that it may be deemed necessary to know.

4. It will be seen in the Table, that not quite the 107th part of the total area of the territory is under cotton cultivation, *i. e.*, about 112 square miles, equal to 71,852 acres, or 1,14,532 beegahs.

5. At the average rate per acre the quantity of cleaned cotton annually produced 130,817 maunds, or of uncleaned cotton 474,055 maunds.

6. In the event of an extended demand for the article, it will be seen from the Table that a probable increase of 15,952 acres in five of the six districts may be calculated on, or a total cultivated area, present and future, of 1,40,056 beegahs, or acres 87,535, yielding 159,970 maunds, equal to 12,797,600 lbs. of cleaned cotton, the value of which at the marts would not be under 10,03,145 rupees.

7. With reference to query 3, *viz.*, Expense of cleaning cotton by the "churkha, or by any other method," none of the district officers have alluded to the practice that obtains in all large towns of cleaning cotton by the instrument known as the "dhunnee" bow-shaped-string, with thick cat-gut, and acted on by a small wooden mallet, with which the gut is struck, separating the cotton from all its crudities.

8. The use of this instrument is, however, confined to the cotton that has already been separated from its seed by the churkhee, and which is not deemed sufficiently purified to be at once converted into yarn.

9. The additional cost for a maund of cotton cleaned by the "dhunnee" is from Rs. 1. 10. to Rs. 2. 1.

10. In conclusion, I must express my opinion that the quantity of land reported under cultivation is rather under than over-rated. I believe this, because large exportations take place annually from the districts of Paneput, Hissar, Delhi, Rohtuck, and Goorgaon.

2ndly. The population of these districts exceeds a million and-a-half.

3dly. Now, taking the average quantity produced in these districts as per previous statement at 130,817 maunds or 10,465,360 lbs., the quantum per annum would be rather under 7 lbs. for the use of each individual if no exportation took place.

296—Sess. 2.

F

But

I.
Bengal and
North Western
Provinces.

But as the exportations amount to probably one-half of the whole produce, the rate per head of for individual consumption would be reduced to about 3 lbs., as per the first more simple process of separating the benowlee, or seed; but, taking into calculation the further reduction in weight caused by the after process of the dhunnee (say one-third) the quantity per head would not exceed 2 lbs., which could scarcely be sufficient for even the poorest peasant for the whole year.

Delhi Commissioner's Office, 28 June 1848. I have, &c.
(signed) T. Metcalfe, Commissioner.

(True copy.)
(signed) C. Allen,
Offg. Secy. to Govt., N. W. P.

(No. 2 in No. 1500 of 1849.)—(No. 29 of 1848.)

From Captain E. J. Robinson, Superintendent Bhutte Territory, to Sir Theophilus Metcalfe, Bart., Agent and Commissioner, Delhi.

Sir,
I HAVE the honour, in reply of your communication as per margin,* to state, for the information of Government, that no cotton is produced in this district, but is all imported from the eastward.

Collector's Office, Bhutte Territory, Camp Sirsa, 6 March 1848. I have, &c.
(signed) E. J. Robinson,
Supt. Bhutte Territory.

(True copy.)
(signed) C. Allen,
Offg. Secy, to Govt., N. W. P.

(No. 3 in No. 1500 of 1849.)—(No. 146 of 1848).

From N. H. E. Prowett, Esq., Collector of Paneput, to Sir Theophilus Metcalfe, Bart., Commissioner, Delhi.

Sir,
IN reply to your letter, noted marginally †, with annexures, I have the honour to report as follows:

Question 1.—The average rate per rupee of the pergunnahs in this district, is—

Pergunnah	M.	s.	c.
Paneput Bangur	0	7	4
ditto Khadir	0	5	12
Soneput Bangur	0	7	8
ditto Khadir	0	7	0
Kurnaul	0	6	0
Average	0	6	11

The places where transactions in the sale of cleaned and uncleaned cotton produced in the district are carried on, are—

Place	Rate of Sale
Paneput	0 5 12 per rupee
Soneput	
Kurnaul	
Naultha	0 6 0 "
Koorana	
Kyeth	0 7 4 "
Buwara	
Gudhee Bala	0 7 8 "
Mohana	
Average	0 6 10 "

Question

* No. 515, dated 28th February 1848, and No. 529, dated 12th idem, from Secretary to Government North Western Provinces, to Secretary Sudder Board of Revenue.
† No. 515, dated 28th February 1848, and No. 575, dated 6th March 1848.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 43

Question 2.—The answer to this question is shown in the subjoined Table.

I.
Bengal and
North Western
Provinces.

	With Advance.		Without Advance.		
	Cleaned.	Uncleaned.	Cleaned.	Uncleaned.	
	<i>M. s. c.</i>	<i>M. s. c.</i>	<i>M. s. c.</i>	<i>M. s. c.</i>	
Paneeput Bangur - - - -	0 8 0	0 21 6	0 7 2	0 24 0	} per rupee.
Ditto - Khadir - - - -	0 7 0	0 20 0	0 5 14	0 18 0	
Soneput Bangur - - - -	0 8 0	0 25 0	0 7 10	0 26 0	
Ditto - Khadir - - - -	0 8 0	0 24 0	0 7 14	0 22 0	
Kurnaul - - - -	0 7 0	0 20 0	0 6 4	0 18 1	
Average - - - -	0 7 9½	0 22 1	0 6 13	0 20 13	

Question 3.—Cotton is generally cleaned by the “churkee” in this district, and the average cost for cleaning is six annas per maund.

Question 4.—The nearest place for transporting cotton by water is the Jumna River on the east; but it is not usual for people to carry it in that direction; but when so carried, the average cost of carriage comes to 4 a. 5 p. per maund. Cotton produced in the district is mostly carried towards the north-west frontier by land.

Question 5.—The average produce per beegah, is 5 m. 21 s. 8½ c., and per acre, 8 m. 34 s. 6 c.

Question 6.—The quantity of land under cotton cultivation is about 23,712 beegahs, and in the event of demand, could be extended to about 26,725 beegahs.

The quantity of cotton produced in this district may be roughly calculated at 1,31,295 maunds, which is purchased by resident mahajuns, and not by foreigners.

The beegah is 3,025 English square yards. The maund is 40 seers. Theseer is 80 Company's rupees' weight. The rupee is the Company's rupee.

Zillah Paneeput Collector's Office,
2 May 1848.

I have, &c.
(signed) N. Prowett, Collector.

(True copy.)

(signed) C. Allen,
Offg. Secy. to Govt., N. W. P.

(No. 4, in No. 1500 of 1849.)—(No. 23, of 1848.)

From C. Mackenzie, Esq., Collector of Hissar, to Sir Theophilus Metcalfe, Bart.,
Commissioner, Delhi.

Sir,

I HAVE the honour to acknowledge the receipt of your letter, No. 515, dated the 28th February last, with its enclosures from the Board and Government on the subject of the cultivation and exportation of cotton, and to subjoin my answers to the several questions proposed by the Honourable the Court of Directors on the subject.

2. The cotton produced in this district, is partly consumed in this district* and partly transported to Umballa, Loodiana, and into the Puttiala and Bikaneer territories. It is seldom or never sent to Delhi, and the expense of conveyance to the sea is too great to admit of its exportation to other countries. A ready sale for it is always found at the marts of Rajghur and Bahadera, in the Bikaneer, and Bittinda and Senum in the Puttiala territory. It is sold by the growers to merchants in this district, chiefly to merchants in Hansi and Hissar, but also partly to bunyas in their own villages. The merchants in Hansi and Hissar transport it to the above marts.

Question. 1. What is the price of cotton freed from seed at the principal mart or marts in your district?

Answer. 1. At Hissar at 5 seers 8 chittacks per rupee. At Hansi at 6 seers, or 6 seers 4 chittacks per rupee.

2. At what price does the ryot sell his cotton cleaned or uncleaned, and with or without advance?

2. At Hissar the ryot sells uncleaned cotton at 18 seers, or 18 seers 8 chittacks per rupee, cleaned

* The quantity of cotton produced in this district is about 63,043 maunds of uncleaned, or 21,014 maunds of cleaned cotton yearly, of which about a half is consumed in this district.

I.
Bengal and
North Western
Provinces.

and cleaned cotton at 5 seers 12 chittocks per rupee. At Hansi the ryot sells uncleaned cotton at 19 seers or 20 seers per rupee, and cleaned cotton at 6 seers 8 chittacks and 6 seers 12 chittacks per rupee. At Hansi the ryots are sometimes paid in advance, and the price at which they sell uncleaned cotton is then 24 seers or 25 seers per rupee. At Hissar it has not been usual to make advances to the ryots.

3. What is the expense of cleaning cotton by the churka or foot roller, or by any other method which may be in use?

3. The churka is the implement always used for cleaning cotton, and the work is performed at an expense of eight annas per maund.

4. What are the expenses of conveying cotton to the nearest port for shipment?

4. The expense of conveying cotton by land from Hansi to Delhi is eight annas per maund, and from Delhi to the Sandheads, by water, Rs. 1. 10. per maund, in all Rs. 2. 2. per maund.

5. What is the average produce of cotton per beegah or acre?

5. The average produce may be estimated at 6 maunds 32 seers of uncleaned, or 2 maunds 10½ seers of cleaned cotton per acre.

6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried in the event of an increased demand?

6. There are 9,271 acres cultivated with cotton in this district, and an increase in the cultivation would depend on increased means of irrigation. The only other irrigated crop cultivated to any extent in this district is wheat, and notwithstanding an increased demand and higher price for cotton, the cultivation of wheat to the extent now cultivated would not, it is believed, be at once relinquished in favour of cotton. By the means which are now being taken for improving and extending the means of irrigation in the north of the district, a larger supply of cotton may certainly be anticipated, but the extent to which it may be cultivated in preference to other crops is very uncertain. I hope to add nearly 2,000 acres to the irrigated land in the north of the district during the present year.

7. The beegah, maund, and rupee used in answering these questions?

7. The beegah is 3,025 yards square, and one beegah 12 biswas are one acre. The maund is 42 seers, the seer weighing 80 Company's rupees. The rupee is the Company's rupee, and the Furruckabad rupee also is still in use.

Collector's Office, Hissar,
13 April 1848.

I have, &c.
(signed) C. Mackenzie, Collector.

(True copy.)

(signed) C. Allen,
Offg. Secy. to Govt., N. W. P.

(No. 5 in No. 1500 of 1849.)—(No. 89 of 1848.)

From A. A. Roberts, Esq., Officiating Collector of Delhi, to Sir Theophilus Metcalfe, Bart.,
Commissioner of Delhi.

Sir,

WITH reference to your letter, No. 515, dated the 28th February last, forwarding copy of a letter, No. 529, dated the 12th idem, from the Secretary to Government to the Secretary Sudder Board, and your docket, No. 575, dated 7th March, with enclosures, regarding the cultivation and exportation of cotton, I have the honour to submit the following replies to the questions contained in the Honourable Court's despatch.

Question. 1. What is the price of cotton freed from seed at the principal mart or marts in your district?

Answer. 1. There is no regular mart in the district of Delhi Proper. The cotton grown here is chiefly taken to Kharkhonda in the Rohtuck district, where there is a large mart. The clean cotton which finds its way into the city is sold at six and seven seers per Company's rupee. There are, however, two sorts of cotton, first, the "phullen kee rooee," or first quality, which the village buneas sell at 6½ or 6¾ seers per Company's rupee; and, secondly, the "samhoodhee," or mixed, which is sold at nearly eight seers per rupee.

2. At what price does the ryot sell his cotton, cleaned or uncleaned, with or without advances?

2. The ryots sell the cleaned cotton, first quality, at 6½, 6¾, and 7 seers per Company's rupee, and mixed at 8½, 8¾, and 9 seers ditto ditto. They sell kupass at two rupees per maund. The system of advances does not obtain here.

3. What is the expense of cleaning cotton by the churka or foot roller, or by any other method which may be in use?

3. There is no other method of cleaning cotton except by the churka. The cultivators usually

usually give the seed in payment of the expense of cleaning. Sometimes the cleaner takes two-thirds of the seed as his share and the proprietor one-third; sometimes the whole of the seed is taken by the cleaner. This depends upon the price of benowla (seed) in the market. The average price is one rupee per maund. If paid for in cash, eight annas are paid for cleaning one maund of kuppas, which yields 12 seers of clean cotton, and 28 seers of benowla. Buncas usually keep their own churkas, and thereby make a great profit. For instance,

	<i>Rs. a. p.</i>
One maund of kuppas, at 20 seers per rupee, costs -	2 - -
The above yields 12 seers of clean cotton, which, at 6½ seers per rupee, fetches - - - - -	1 13 6
28 seers of beenowla is worth - - - - -	- 11 -
	Rs. 2 8 6

This is to say, he gets *Rs.* 2. 8. 6. for that for which he paid but two rupees, and makes a clear profit of 25 per cent.

4. What are the expenses of conveying cotton to the nearest port for shipment?

4. Little or no cotton is exported from Delhi; but from the inquiries I have made, it would seem that cotton could be conveyed by water, in country boats, at from *Rs.* 2. 8. to 3 rupees per maund, including insurance from Delhi to Calcutta.

5. What is the average produce of cotton per beegah or acre?

5. In the northern pergunnah the average produce of clean cotton per acre of 4,840 square yards is said to be 1 m. 11 s. 8 c., or 103 lbs. In the southern pergunnah the average produce per acre is 0 m. 34 s. 14 c., or 69 lbs. The average of the two pergunnahs is 1 m. 3 s. 3 c., or 86 lbs; but I consider this to be below the mark. The averages have been framed upon the statements of the zemindars themselves, and the village accountants, who are ever prone to underrate the amount of produce.

6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried in the event of an increased demand?

6. I have taken the average of the last six years, and find that 3,321 acres of land are under cultivation with cotton. The cultivation might probably be doubled; but there are several obstacles to the extensive cultivation of cotton in this district. The lands may be divided into khudir, dabuur, nuhree, and baranee. In the two former, cotton is seldom cultivated, owing to the fear of inundation. It is not, moreover, profitable to cultivate it in the baranee lands, and therefore the principal cotton cultivation is to be met with in the canal villages, or in the bangur lands which have irrigation from wells. It, however, requires much labour, and is very precarious in its return, and the people generally prefer the cultivation of the esculent crops. The farming system which prevails to a considerable extent in this district, is another obstacle to the extensive cultivation of cotton. The farmers always collect by a fixed rate per beegah for cotton, and this rate is sometimes as high as *Rs.* 6. 7. per statute acre; but three rupees per beegah, or *Rs.* 4. 12. 9. per acre, is a common rate, and the crop must be good to yield any profit to the cultivators at this rate; but whether the crop be a full one or no the farmer will exact the prescribed rate.

I have, &c.
(signed) *A. A. Roberts*, Offg. Collector.

Delhi Collectorship,
5 May 1848.

(True copy.)
(signed) *C. Allen*,
Offg. Secy. to Govt. N. W. P.

(No. 6 in No. 1500 of 1849).—(No. 186 of 1848.)

From *E. T. Colvin*, Esq., Officiating Deputy Collector of Rohtuck, to Sir *Theophilus Metcalfe*, Bart., Commissioner Delhi.

Sir,

I HAVE the honour to acknowledge your docket, No. 575, of the 6th of March last, and with reference to the questions contained in the extract of the despatch of the Honourable Court, I beg to reply,

1. That at Bhewanee, which is the principal mart in this district, the average price of clean cotton is six seers two chittacks per rupee. At Rohtuck, Kher Khonda, and Gohana, it is a little cheaper, but the reason is, that these places are situated on the canal. The produce in the neighbourhood of Bhewanee is small.

2. It is not usual to give advances upon cotton cultivation. The ryot sells his produce at about 6 seers 12 chittacks cleaned. Where by chance an advance may have been given, it makes the articles from a quarter to half a seer cheaper.

3. The churkas universally used to clean cotton. When the proprietor of uncleaned cotton

I.
Bengal and
North Western
Provinces.

cotton wishes to clean it, if the quantity is too great to be done by himself or the members of his household, he employs others to do it. The men are rarely (though they are sometimes) paid in money. Out of a maund of uncleaned cotton about 10 seers of clean will be obtained, and 30 seers of benowla, or seed. Half of this latter is the perquisite of the cleaner: its value may be six or seven annas.

4. To convey cotton from hence to Calcutta costs about Rs. 2. 7. per maund. It is usually taken from hence to Agra by land, and from that place to Calcutta by water.

5. The produce per beegah is very uncertain, depending entirely upon the nature of the rainy season. If that is favourable, and rain abundant, two maunds per beegah may be looked for, or even more; if the rains fail, a maund and a half is more than the average.

6. The land actually under cotton cultivation in this district in the Khurreef is about one-fiftieth part of the whole area; but this might be increased to almost any extent were the demand sufficient, and I believe that the area now cultivated might be made to produce much more were a proper system of sowing and tending substituted for the present most slovenly one.

Rohtuck Division, Collector's Office,
18 May 1848.

I have, &c.
(signed) *Edward Colvin*,
Officiating Deputy Collector.

(True copy).
(signed) C. Allen,
Offg. Secy. to Govt., N. W. P.

(No. 7 in No. 1500 of 1849.)—(No. 197 of 1848.)

From *E. T. Colvin*, Esq., Officiating Deputy Collector, Rohtuck, to Sir *Theophilus Metcalfe*, Commissioner, Delhi.

Sir,

I HAVE the honour to acknowledge the receipt of your letter, No. 1275, dated the 23d instant.

With regard to the difference noticed in your 1st para., I have to state, that almost every crop of cotton will give a different proportion of seed and clean cotton. I think 12 seers of the latter in the maund, rather above the average. I cannot account for the difference in price in cleaning kuppas. My information was obtained from the principal traders in Bhowanee and other parts.

2. With reference to your 2d para. my calculation comprised every thing, *beema** and all. The actual carriage is about Rs. 1. 14. per maund from Bhowanee.

3. The average of good and bad seasons may be about one maund and three-fourths.

4. About 23,284 beegahs of land are under cotton cultivation, and I should think 30,000 or more might be brought under cultivation in the event of an increased demand.

Rohtuck Division, Collector's Office,
31 May 1848.

I have, &c.
(signed) *Edward Colvin*,
Officiating Deputy Collector.

(True copy).
(signed) C. Allen,
Offg. Secy. to Govt., N. W. P.

(No. 8 in No. 1500 of 1849.)—(No. 93 of 1848.)

From *W. De Hayne Routh*, Esq., Collector of Gurgaon, to Sir *Theophilus Metcalfe*, Bart., Commissioner, Delhi.

Sir,

WITH reference to your letters and their enclosures as per margin,† I have the honour to forward herewith a statement embodying all the points of information required by the Court's despatch, No. 14,, dated 10 November 1847, regarding the supply of cotton in this district.

Zillah Gurgaon Collectorship,
15 June 1848.

I have, &c.
(signed) *W. De H. Routh*, Collector.

(True copy).
(signed) C. Allen,
Offg. Secy. to Govt., N. W. P.

* *Insurance*.

† Commissioner's letter, No. 515, dated 28th February 1848. Secretary to Government, No. 629, dated 12th February 1848. Commissioner's socket, No. 575, dated 6th March 1848. Secretary to Government of India, No. 75, dated 15d January 1848. Honourable Court of Directors, No. 14, dated 10th November 1847.

(No. 9 in No. 1500 of 1849.)

296—Sess. 2.

DISTRICT.	Query 1.	Query 2.				Query 3.	Query 4.	Query 5.		Query 6.		Query 7.
	Price of Cotton, freed from Seed, at the principal Marts in the District, per Maund.	Price at which the Ryot sells his Cotton, Cleaned or Uncleaned, and with or without Advances, per Maund.				Expense of Cleaning Cotton by the Churka, per Maund.	Expense of Conveying Cotton to the nearest Port for Shipment, per Maund.	Average Produce of Cotton, per Acre.		Quantity of Land under Cultivation with Cotton, and Extent to which it is probable Cultivation could be carried, in the event of increased Demands.		The Maund, Seer, Rupee, and Beegah, used in these Calculations.
		With Advances.		Without Advances.				Cleaned.	Uncleaned.	Under Cultivation.	Probable Extent of Cultivation.	
		Cleaned.	Uncleaned.	Cleaned.	Uncleaned.							
<i>R. a. p.</i>	<i>R. a. p.</i>	<i>R. a. p.</i>	<i>R. a. p.</i>	<i>R. a. p.</i>	<i>R. a. p.</i>	<i>R. a. p.</i>	<i>M. s. c.</i>	<i>M. s. c.</i>	<i>Acres.</i>	<i>Acres.</i>		
Bhutteeanah	- - -	- - -	- - -	- - -	- - -	None grown.	-	-	-	-	-	Maund - 40 Seers. Seer - - 80 Co.'s Rs. Beegah - 3,025. Rupee - Co.'s Rs.
Paneeput	5 15 8	5 4 7	1 14 -	5 18 11	1 14 9	- 6 -	- - -	- - -	8 34 2	14,820	16,703	
Hissar	6 13 -	- - -	1 10 7	6 5 4	2 1 11	- 8 -	2 2 -	- - -	5 35 3	9,271	11,271	
Delhi	6 2 5	- - -	- - -	6 1 6	2 - -	- 8 -	2 12 -	1 3 1	- - -	3,321	6,642	
Rohtuck	6 8 5	5 9 10	- - -	6 12 -	- - -	- 7 -	2 7 -	2 32 0	- - -	14,552	18,750	
Gurgaon	5 14 2	5 8 -	1 7 9	5 18 1	1 15 5	1 2 11	2 12 3	1 23 0	4 39 5	29,617	35,418	
	6 4 4	5 7 8	1 10 5	6 2 9	2 - -	- 9 7	3 5 9	1 19 6	6 22 14	71,582	87,535	

Delhi, Commissioner's Office,
28 June 1848.

(True copy.)

(signed) C. Allen,
Offg. Secy. to Govt., N. W. P.

(signed) T. Metcalfe,
Commissioner.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 47

I.
Bengal and
North Western
Provinces.

(No. 10 in No. 1500 of 1849.)

STATEMENT of the Price and Supply of Cotton in the District of Gurgaon.

No.	TEHSEEL DIVISIONS.	Price of Cotton, freed from Seed, at the Principal Marts in the District, per Maund.	Price at which the Ryot sells his Cotton, Cleaned or Uncleaned, and with or without Advances, per Maund.				Expense of Cleaning Cotton by the Churka, per Maund.	Expense of Conveying Cotton to the nearest Port for Shipment, per Maund.	Average Produce of Cotton, per Beegah.		Quantity of Land under Cultivation with Cotton; and Extent to which it is probable that Cultivation would be carried, in the Event of an increased Demand.	
			With Advances.		Without Advances.				Cleaned.	Uncleaned.		
			Cleaned.	Uncleaned.	Cleaned.	Uncleaned.						
1	Poonahana - -	Poonahana - 5 11 6	R. a. p. 5 9 3	R. a. p. 1 12 3	R. a. p. 5 11 6	R. a. p. 1 14 6	} 1 - -	2 12 -	0 33 4	2 20 0	18,744 beegahs. Cultivation could not be extended.	
	.	Hodul - - 5 12 8	5 10 3	1 13 3	5 12 6	1 15 6						
2	Ferozepore - -	Ferozepore - 5 14 -	1 12 -	5 8 -	1 13 -	1 - -	2 13 -	1 13 -	1 0 0	3 0 0	3,000 beegahs. Cultivation could probably be extended to 5,000 beegahs.	
3	Noh - - -	Noh - - 5 12 -	5 8 -	1 13 3	5 10 -	1 14 -	- 12 -	2 10 3	0 30 0	2 10 0	8,000 beegahs. Cultivation could probably be extended to 8,500 or 8,700 beegahs.	
4	Rewaree - -	Rewaree - 7 4 9	The system of advances does not obtain in this pergunnah.			7 3 2	2 6 3	2 4 -	2 14 4	1 0 0	3 0 0	1,432 beegahs. Cultivation could probably be extended to 2,148 beegahs.
5	Pulwul - -	Pulwul - - 5 5 4	5 - -	1 10 -	5 4 -	1 11 4	1 - -	2 12 -	3 0 0	9 0 0	9,482 beegahs. Cultivation could probably be extended to 11,852 beegahs.	
6	Jharsah - -	Jharsah - - 6 6 5	5 14 -	1 15 -	6 - -	2 - -	1 10 6	- - -	0 30 0	2 20 0	6,730 beegahs. Cultivation could probably be extended to 8,225 beegahs.	
		Sonah - - 5 10 8	5 6 8	1 14 6	5 9 3	2 - -	1 - -	} The cotton produced in these pergunnahs is not exported.	0 25 0	2 0 0		
		Dhwj - - 6 - -	5 12 -	1 14 9	5 14 6	2 - -	1 - -		0 25 0	2 0 0		
		Toorw - - 5 12 -	5 8 -	1 14 -	5 10 8	2 - -	1 - -		0 18 0	1 20 0		

Remarks.—The cotton of this district is purchased by resident and non-resident traders, chiefly for the Calcutta market. The cost of conveying cotton to the nearest port for shipment is calculated to Calcutta, and includes all charges on account of packing, carriage, insurance, custom dues, &c. The average produce of cotton per beegah in the different tehseel divisions varies considerably; and in the case of Pulwul is so much in excess of the other averages, that there is ground for doubting the correctness of the statement. The soil of pergunnah Pulwul is well adapted to cotton cultivation, and the average produce is very much larger there than elsewhere; but from personal inquiries from zemindars and others well acquainted with these matters, I have every reason to believe that the estimate of the tehseeldar is much exaggerated. The extent of present and probable cultivation, on the other hand, is, I have no doubt, much underrated, particularly in pergunnah Pulwul, and must only be taken as an approximation to the truth. The maund use in this cultivation is of 40 seers, the seer weighing 80 Co's Rs.; and the beegah of 3,025 square yards.

Zillah Gurgaon Collectorship,
15 June 1848.

(True copy.)

(signed) C. Allen,
Offg. Secy. to Govt., N. W. P.

W. De Hayne Routh,
Collector.

(No. 11, in No. 1,500 of 1849.) (No. 80 of 1848.)

From *A. Ross*, Esq., Superintendent of Deyrah Dhoon, to *D. B. Morrieson*, Esq.,
Commissioner, Division of Meerut.

I.
Bengal and
North Western
Provinces.

Sir,

I HAVE the honour to acknowledge the receipt of your circular, No. 11, of the 7th March, with enclosures, and in reply to state that as no cotton is grown in this district for purposes of trade, it is out of my power to answer the queries framed by the Honourable Court of Directors.

2. I should be inclined to think, however, that neither the soil nor climate of the Dhoon was suited to the cultivation of the cotton plant.

I have, &c.

(signed) *A. Ross*,
Superintendent.

Deyrah Dhoon, Superintendent's Office,
24 May 1848.

(True copy.)

(signed) *C. Allen*,
Officiating Secy. to Govt. N. W. P.

(No. 12, in No. 1500 of 1849.) (No. 219 of 1848.)

From *F. B. Davidson*, Esq., Collector of Saharunpore, to *D. B. Morrieson*, Esq.,
Commissioner of the First or Meerut Division.

Sir,

WITH reference to your circular of the 7th March last, No. 11, I have the honour to submit the following answers to the queries of the Honourable the Court of Directors, No. 14, of the 10th November last.

Query 1. What is the price of cotton, freed from seed, at the principal mart or marts in your district?

Answer. The average price of cotton, freed from seed, at the markets of Saharunpore, Nakoor, Ambehta, Gungo, Chilkanah, Lukhnowtee, Teetron, Sovltanpore, Sirsawah Roorkee, Bhugwanpoor, Sundhourree, Jowullapoor, Kunkhul, and Munglour is *Rs. 7. 7.* per maund, and at those of Deobund and Rampoor *Rs. 7. 4.* per maund.

2. At what price does the ryot sell his cotton, cleaned or uncleaned, and with or without advances?

The ryot of this district sells his cotton cleaned at the rate per maund of *Rs. 7. 5.* with advance, and at *Rs. 7. 5. 9½.* without advance, and uncleaned cotton is sold with advance thus: first sort, at *Rs. 2. 3. 8½.*; second sort, *Rs. 2. 0. 7.*; third sort, at *Rs. 1. 13. 7½.* per maund; and without advance, first sort, at *Rs. 2. 6. 2½.*; second sort, at *Rs. 2. 2. 2½.*; third sort, at *Rs. 1. 15. 3.* per maund.

3. What is the expense of cleaning cotton by the churkhee or foot-roller, or by any other method which may be in use?

The cotton throughout the district of Saharunpore is cleaned by only one method, the churkhee, and the expense of cleaning in the town of Saharunpore is 12 annas per maund; in the other towns in this district the custom is to give the persons who clean it the seed; and at Nukoor, if they be dissatisfied with the seed, they receive an equal weight of wheat.

4. What are the expenses of conveying cotton to the nearest port for shipment?

Six rupees per maund to Calcutta; but the trade is not in that direction, but to the westward.

5. What is the average produce of cotton per beegah or acre?

The average produce of cotton in the district of Saharunpore is 5 maunds 35 seers 10½ chittacks uncleaned per acre.

296—Sess. 2.

G

6. What

I.
Bengal and
North Western
Provinces.

6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried in the event of an increased demand?

The quantity of land under cultivation with cotton is, in this district, at present 30,637 acres, and in the event of increased prices 8,789 acres: more might possibly be brought under tillage of cotton; but as the prices are high, and not likely to be enhanced, this is not to be expected.

I have, &c.

(signed) F. B. Davidson,
Collector.

Saharunpore Collectorship,
12 June 1848.

Note.—The maund indicated above is of 80 tolahs per seer, or the Government weight; the rupee, the Company's rupee; the acre, the English statute acre of 4,848 square yards.

(True copy.)

(signed) C. Allen,
Officiating Secy. to Govt. N. W. P.

(No. 13, in No. 1,500 of 1849.)

Question 1. What is the price of cotton, freed from seed, at the principal mart or marts in your district?

Answer. 5 seers 4 chittacks per Furruckabad rupee (the seer equalling 92 rupees).

2. At what price does the ryot sell his cotton, cleaned or uncleaned, and with or without advances?

The ryot sells his cleaned cotton at 5 seers 8 chittacks the rupee; and, uncleaned, at 19 seers the rupee, without advance.

3. What is the expense of cleaning cotton by the churkee or foot roller, or by any other method which may be in use?

It is customary to allow the person by whom the cotton is cleaned to appropriate the seed to his use in compensation of his labour. A maund of uncleaned cotton usually yields 12 seers of clean cotton, and 28 seers of seed. The value of the seed is about 10 a. 6 p. There is no other method of cleaning cotton than by the churkee.

4. What are the expenses of conveying cotton to the nearest port for shipment?

There is no port to which cotton is conveyed from this district for shipment. It is almost entirely disposed of in the neighbouring districts of Furruckabad and Mynpoorie.

5. What is the average produce of cotton per beegah or acre?

The average produce of cotton per statute acre is 5 maunds 4 seers 1 chittack.

6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried in the event of an increased demand?

The quantity of land under cultivation in this district is 15,601 statute acres. In the event of an increased demand the cultivation of it might probably extend to 1,500 or 2,000 acres more.

17 May 1848.

(signed) H. W. Deane,
Collector Moozuffurnuggur.

(True copy.)

(signed) C. Allen,
Officiating Secy. to Govt. N. W. P.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA.

51

(No. 14, in No. 1500 of 1849.)

STATEMENT of Particulars regarding the Produce of Cotton in the Meerut District, in reply to the Queries framed by the Court of Directors.

1. NAME of DISTRICT.	2. Price of Cotton, freed from Seed, at the principal Marts per Rupee.	3. Price of Cotton, Cleaned or Uncleaned, sold by the Ryots with or without Advances.				4. Expense and Method of Cleaning Cotton.	
		Cleaned per Rupee.	Uncleaned per Rupee.	With Advance.	Without Advance.	Expense per Maund.	Method.
Meerut - - - -	M. s. c. 0 6 5	s. s. 6 7	s. c. 21 12	It is not cus- tomary in this district to advance on cotton.	s. c. 6 7	Rs. a. p. 8 9 9	Churkhee.

NAME of DISTRICT.	5. Expenses of Conveying Cotton to the nearest Port for Shipment.	6. Average Produce of Cotton per Beegah, or Acre.		7. Quantity of Land under cultivation with Cotton, and probable Extent to which cultivation could be carried.		8. Definition of the Beegah, Maund, and Rupee, used in answering these Questions.		
		Per Beegah Puckah.	Per Acre.	Quantity under Cultivation.	Probable Extent.	Beegah.	Maund.	Rupee.
Meerut - - - -	No shipment-	M. s. c. 1 38 10	M. s. c. 3 6 4	Bgs. bu. 30,984 15	Bgs. 40,000	3,025 sq. yds.	40 seers of 80 toahs each.	Co's Rupee of 1 tola weight.

Zillah Meerut Collector's Office, }
4 August 1848.

(signed) C. Gubbins,
Collector.

(True copy.)
(signed) C. Allen,
Officiating Secretary to Government, North Western Provinces.

(No. 15, in No. 1500 of 1849.)

MEMORANDUM.

1.	2.	3.	4.	5.	6.
What is the Price of Cotton, freed from Seed, at the principal Mart or Marts in your District?	At what Price does the Ryot sell his Cotton, cleaned or uncleaned, and with or without advances?	What is the Expense of cleaning Cotton, by the Charka, or Foot Roller, or by any other method which may be in use?	What are the Expenses of conveying Cotton to the nearest Port for Shipment?	What is the Average Produce of Cotton per Beegah or Acre?	What is the quantity of Land under cultivation with Cotton, to what extent is it probable that the cultivation could be carried in the event of an increased demand?
M. s. c. Per rupee - 0 6 4	M. s. c. Per rupee, cleaned, without advance - 0 6 12 Per rupee, including seed, without advance 0 20 8 Per rupee, cleaned, with advance 0 7 8 Per rupee, including seed, with advance 0 24 0	M. s. c. Per rupee 1 0 0	-- Cotton could only be sent for shipment to Calcutta; the cost of conveyance from this district would be to the Ghat, at Anoopshubur, distant 24 miles, 1½ anna per maund per 16 miles, and from thence to Calcutta, at 12 annas the maund.	M. s. c. Per acre - 2 33 0	A. r. p. 14,505 - -

Remarks.—The cultivation would greatly increase provided wells were built; but there is no doubt, on the completion of the canal, cotton will be a commodity sown to a great extent in all districts through which the canal will pass.

Boolundshuhur Collectorship, }
7 June 1848.

(signed) A. W. C. Plowden,
Collector.

(True copy.)
(signed) C. Allen,
Officiating Secretary to Government, North Western Provinces.

I.
Bengal and
North Western
Provinces.

(No. 16, in No. 1500 of 1849.) (No. 175).

From *G. Blunt*, Esq., Collector of Allyghur, to *D. B. Morrieson*, Esq.,
Commissioner of the Meerut Division.

Sir,

1. IN reply to your Circular, No. 11 of the 7th March, and its enclosures, I have the honour to submit the following report on the cultivation of cotton in this district.

2. On the receipt of your letter, I issued orders to the several tehseldars and to the large landholders and merchants engaged in the cotton trade, to supply the information called for by the Honourable the Court of Directors. The result of these inquiries are given at length in the replies to the questions proposed by the Court. From the reply to Question 6 you will perceive, that the cultivation of cotton is carried on in only 69,050 acres out of 921,717 acres, comprising the cultivated area of this district, and I have every reason to believe that if a steady demand for the article were established, the cultivation might be greatly extended; the quality used in the district in the manufacture of thread and coarse cloths is estimated at about one-sixth of the annual produce, the rest is exported and sent to Mirzapore; the market price at the Dusserah at the several marts in this district being regulated by the demand in the Mirzapore market. The failure of the large houses in Calcutta has forced the closing of the greater part of the indigo concerns in this district, and a large quantity of land, which used to be laid down in indigo, is now employed in the raising of less remunerating crops. A great part of these lands would be immediately sown with cotton, if a steady demand were established. Cotton in an average rainy season is a remunerating crop, requires only twice weeding, and the harvest is early. The great fluctuation in the price in the Mirzapore market, which mainly depends on the China trade, renders the demand always unsteady, and the merchants who have sent cotton from this to Mirzapore this season, have hardly recovered their outlay. I have been unable to procure any sufficient data of the quantity of this district's cotton sent to Mirzapore, as a considerable quantity is sent from Ghats in the Boolundshuhur district, *viâ* the Ganges, and also *viâ* the Jumna from Ghats in the vicinity of Agra.

Query. 1. What is the price of cotton, freed from seed, at the principal mart or marts in your district?

The following Table will show the prices of cotton, freed from seed, in the undermentioned tehseldares in this district:

		Tehseeldares.	Price of Cotton, freed from Seed, per Maund.
			<i>Rs. a. p.</i>
Cotton Mart	-	Coel - - - - -	7 4 -
Cotton Mart	-	Attrowlee - - - - -	7 1 4
		Akerabad - - - - -	7 1 4
		Eglass - - - - -	6 2 6
		Khyr. - - - - -	6 8 -
		Tuppuhl - - - - -	6 8 -
Cotton Mart	-	Hattrass - - - - -	7 - -
		Secundra Rao - - - - -	8 - -
Average price per Maund - - -			6 15 1½

2. At what price does the ryot sell his cotton, cleaned or uncleaned, and with or without advance?

The prices at which the ryot sells his cotton, cleaned or uncleaned, and with or without advances in the several tehseldares, are as follow:

TEHSEELDAREES.	With Advance.		Without Advance.	
	Cotton Cleaned.	Cotton Uncleaned.	Cotton Cleaned.	Cotton Uncleaned.
	<i>Rs. a. p.</i> <i>per maund.</i>	<i>Rs. a. p.</i> <i>per maund.</i>	<i>Rs. a. p.</i> <i>per maund.</i>	<i>Rs. a. p.</i> <i>per maund.</i>
Coel - - - - -	6 8 -	1 12 -	7 - -	1 14 -
Attrowlee - - - - -	6 5 4	1 12 4	6 15 8	2 - -
Akherabad - - - - -	6 12 9	1 15 6	7 - 6	2 3 -
Eglass - - - - -	{System of advance not in force - - -}		6 10 -	2 4 6
Khyr - - - - -	ditto - - ditto - -		6 8 -	2 - -
Tuppuhl - - - - -	6 - -	2 - -	6 8 -	2 4 -
Hatrass - - - - -	{System of advance not in force - - -}		7 - -	2 10 -
Secundra Rao - - - - -	6 8 -	2 - -	6 12 -	2 4 -
Average price per Maund - - -	6 6 9	1 14 4	6 12 9	2 2 11

3. What is the expense of cleaning cotton by the churka or foot rollers, or by any other method which may be in use?

The only instrument used for cleaning cotton in this district is the common churka, and it is the general custom to give the benowla or cotton seed in exchange for the labour of extracting it; the maund of kupas or uncleaned cotton on an average yields 27 seers of seed and 13 seers of cleaned cotton: the value of the 27 seers of seed is about seven annas, and this amount may be assumed as the cost of cleaning a maund of kupas.

4. What are the expenses of conveying cotton to the nearest port for shipment?

As stated above, the trade in cotton, the produce of this district, is only to Mirzapore, none of the traders sending their goods further than that mart. The average expense of transit, including bags, land and water carriage, insurance, &c., is *Rs.* 1. 14 *a.* per maund.

5. What is the average produce of cotton per beegah or acre?

The average produce of cotton (uncleaned or kupas) per beegah and per acre, is as follows:

	<i>Md. s. c.</i>
Average per beegah - - - - -	1 36 4
Average per acre - - - - -	3 13 7

The amount of cleaned cotton is about one-third of the above.

6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried in the event of an increased demand?

The following table will show the extent of land, both in beegahs and acres, under cultivation with cotton:

TEHSEELDAREES.	Extent of Land in Cultivation.	
	In Beegahs.	In Acres.
Coel - - - - -	19,000	10,820
Attrowlee - - - - -	7,000	3,986
Akherabad - - - - -	9,800	5,581 ½
Eglass - - - - -	28,879	16,414 ½
Khyr - - - - -	12,000	6,834
Tuppuhl - - - - -	6,000	3,417
Hatrass - - - - -	22,494	12,810 ½
Secundra Rao - - - - -	16,080	9,157 ½
TOTAL - - - - -	121,253	69,050

I.
Bengal and
North Western
Provinces.

It is impossible to state to what extent cotton might be cultivated if a steady increased demand sprung up; the only limit to its cultivation would be the quantity of land fitted for its culture, and its market price compared with that of other description of produce.

N. B.—The beegah, maund, and rupee used in answering these questions must be defined.

✓ A beegah here is of 2,756 $\frac{1}{4}$ square yards.

One beegah and 15 biswas (fractions omitted) is equal to an acre.

A maund is of 40 seers of 80 tolahs to a seer, according to Regulation VII. of 1833.

The rupee used in answering these queries is the Company's rupee.

3d. In conclusion, I beg to remark, that there is perhaps no district in these provinces in which there exist so many facilities for introducing experiments in the culture of cotton. A very large part of the soil is suited to its culture; there exists in every pergunnah, nearly, large and influential landholders, who would give their attention to the subject, and who would employ a portion of their seer lands for the purpose; and irrigation by wells is so general as to render crops of every description comparatively safe should the periodical rains fail.

I have, &c.
(signed) *George Blunt*,
Collector.

Allyghur Collector's Office,
27 May 1848.

(True copy.)
(signed) C. Allen,
Officiating Sec. to the Government of N. W. Provinces.

(No. 17, in No. 1500 of 1849.) (No. 38).

From *G. T. Lushington*, Esq., Commissioner of Kumaon, to *William Muir*, Esq., Secretary to the Sudder Board of Revenue, North West Provinces, Agra.

Sir,

IN reply to your docket, No. 8, dated the 10th February last, I have the honour to transmit herewith the accompanying reports on the production of cotton in the province of Kumaon, received from the senior assistants of Kumaon Proper and Gurhwal.

I have, &c.
(signed) *G. T. Lushington*,
Commissioner.

Kumaon Commissioner's Office, Almora,
25 May 1848.

(True copy.)
(signed) C. Allen,
Officiating Sec. to the Government of the N. W. Provinces.

(No. 18, in No. 1500 of 1849.) (No. 74).

From *J. H. Batten*, Esq., Senior Assistant Commissioner, Kumaon Proper, to *G. T. Lushington*, Esq., Commissioner of Kumaon; dated Nynee Tal, 3 May 1848.

Sir,

Revenue.

I HAVE the honour to forward my replies for zillah Kumaon, to the queries of the Honourable Court of Directors, on the subject of the growth of cotton in India, contained in the correspondence forwarded from your office on the 2d March last.

I have, &c.
(signed) *J. H. Batten*,
Sen. Assist. Commissioner.

Kumaon Assistant Commissioner's Office,
3 May 1848.

Question 1. WHAT is the price of cotton, freed from seed, at the principal mart or marts in your district?

Reply. From two to three seers per rupee.

2. At what price does the ryot sell his cotton, cleaned or uncleaned, and with or without advances?

No paharee ryot is in the habit of selling cotton.

3. What is the expense of cleaning cotton by the churka or foot rollers, or by any other method which may be in use?

None. Every one cleans cotton, if required for himself, by his own labour.

4. What

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 55

I.
Bengal and
North West
Provinces.

4. What are the expenses of conveying cotton to the nearest port for shipment?
No cotton is exported.

5. What is the average produce of cotton per beegah or acre?
Unknown.

6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried in the event of an increased demand?

In the whole of Kumaon Proper not more than 260 acres are calculated to be under cotton cultivation. In fact, cotton is more like a garden produce, planted for individual and household use, than a source of agricultural profit. The cotton plant, however, might be largely grown in the Kota Doon and the Bhabur, where it is not now even introduced. The land within the valleys of the hills themselves is all required for the production of food.

(signed) J. H. Batten,
Sen. Assist. Commissioner.

(True copy.)

(signed) C. Allen,
Officiating Sec. to the Government of the N. W. Provinces.

(No. 19, in No. 1500 of 1849.) (No. 7.)

From Captain H. Ramsay, Senior Assistant Commissioner of Kumaon, to G. T. Lushington, Esq., Commissioner in Kumaon.

Sir,

I HAVE the honour to acknowledge the receipt of copy of a letter, No. 529 of 1848, from the Secretary to Government N. W. Provinces, to the address of the Secretary Sudder Board of Revenue, with enclosure, and in reply to state that no cotton grown in this district is offered for sale, therefore the questions in the Honourable the Court of Directors' letter, No. 14, dated 10th November last, require no replies from me.

Gurhwal Senior Assistant's Office,
28 March 1848.

I have, &c.
(signed) H. Ramsay,
Sen. Assist. Commissioner.

(True copy.)

(signed) C. Allen,
Officiating Sec. to the Government, N. W. Provinces.

(No. 20, in No. 1500 of 1849.) (No. 363 A. of 1848.)

From Henry Pidcock, Esq., Commissioner of Rohilkund, to the Sudder Board of Revenue, N. W. Provinces, Agra.

Gentlemen,

THE despatch of the Honourable the Court of Directors, No. 14, dated 10th November last, received with your Board's docket, No. 63, dated 18 February, and the memorandum regarding the cultivation of cotton in India by Dr. Royle having been forwarded to the collectors of this division, I have the honour herewith to transmit their replies to the queries proposed by the Court.

Question 1. What is the price of cotton, freed from seed, at the principal mart or marts in your district?

Answer. The average price of such cotton, soon after it has been gathered, may be safely estimated at 2 *d.* per lb. avoirdupois, for the whole division of Rohilkund.

In the Bijnour return it is set down 11 lbs. per rupee.

Moradabad ditto, at 10 $\frac{1}{2}$ rupees per maund of 100 sicca weight to the seer.

In the Budaon return at 5 seers of 80 tolahs each per rupee.

Bareilly ditto, at 10 rupees per maund of 125 lbs. troy.

Shahjehanpore, Rs. 10. 13. 9. per maund of 111 rupees to the seer weight.

The highest price is estimated at 2 $\frac{1}{2}$ *d.* per lb. in Shahjehanpore; the lowest, at 1 $\frac{3}{4}$ *d.* per lb. in Moradabad.

At Chundowsee, zillah Moradabad, it would naturally be cheaper, that being the great cotton mart in this division, and it is exported thence to Bareilly and Shahjehanpore by land.

At the present time the best cotton of last year is selling in the city of Bareilly at the rate of 3 $\frac{1}{2}$ seers of 100 sicca weight per rupee. A month hence, when the new cotton has

296—Sess. 2.

G 4

been

been brought to market, the best will sell for four seers per rupee, or $2\frac{1}{4}d.$ per lb. avoirdupois; but the best is impure, and apparently unfitted for the English market.

2. At what price does the ryut sell his cotton, cleaned or uncleaned, and with or without advances?

In the Bijnour district the ryut is said to sell his cotton, cleaned or uncleaned, at the rate of 12 lbs. per rupee, or $1\frac{1}{2}d.$ per lb. This is not, I think, the case. The seed pays for the cost of cleaning.

In the Moradabad district the ryut sells his cotton uncleaned. If the price of cleaned cotton be *Rs.* 7. 8. per maund, cotton with the seed in it would fetch *Rs.* 2. 8. per maund, or one-third only. No advances are now taken by Assamees. The ryut prices of cotton have not been given.

In the Budoan district the ryut seldom takes advances; he sells his uncleaned cotton at the rate of 20 seers, his cleaned cotton at five seers 80 sicca weight per rupee.

In the Bareilly district the ryut sells his cotton, if not freed from the seed, at *Rs.* 2. 8. per maund; but he usually sells it, when cleaned, at a rate varying little from the city current price. He takes no advances.

In the Shahjehanpore district, on the contrary, the ryut is said never to sell his cotton in a cleaned state, but always raw; the price may be estimated at *Rs.* 2. 8. 6. per maund. No advances are taken by the cultivator.

It appears from these returns that the cotton is generally sold by the producer with the seed in it. Its price varies but little from the current rates at the time existing in the chief marts. The reason assigned for its being sold in its raw state is the want of leisure; the season at which the cotton ripens being a very busy one for the cultivator. He seldom takes advances because he grows chiefly for the consumption of his own family, and because under the existing revenue system he has time to dispose of his produce before he is called upon to pay rent.

3. What is the expense of cleaning cotton by the churka or foot roller, or by any other method which may be in use?

In the Bijnour district it is said to be *Rs.* 2. 2. per 100 lbs. avoirdupois, or nearly one halfpenny per lb.

In the Moradabad district one rupee per maund of 100 rupees per seer = 103 lbs. or somewhat less than one farthing per lb. Out of one maund of raw cotton, from 12 to 15 seers of cleaned cotton are procured.

In the Budoan district one rupee for five maunds is the charge stated. The cleaned cotton is about one-fourth of the produce with the seed in it.

In the Bareilly district cotton seed is given in return for labour. If in grain, nine or 10 pies per day, and one anna per day if four seers of cotton be cleaned.

In Shahjehanpore the cotton cleaner, using his own churkee, gets all the seed he extracts, and a quantity of coarse grain equal in weight to the cotton cleaned. If the churkee belongs to the owner of the cotton, the cleaner only gets the cotton seed.

The cost of cleaning may be said to vary from one farthing to one halfpenny per lb. avoirdupois. The churkee is the only machine used for separating the seed from the cotton. It is a rude contrivance, but it costs little; can be made and mended by the most ignorant carpenter, and in the hands of the most unskilful, the young and the old of either sex, effectually separates the seed, although it does not free the cotton from impurities.

4. What are the expenses of conveying the cotton to the nearest port for shipment?

The information on this head is imperfect, as regards the Bijnour return. Those from Bareilly and Shahjehanpore contain none. The collector of Moradabad calculates altogether that the charge of conveying cotton from his largest mart, Chundousee, to Calcutta, the nearest port for shipment, a distance by water of at least 1,200 miles, would be about *Rs.* 13. 5. per cent. on the value of the cotton shipped. The Budaon calculation would not differ much from this if insurance be added.

5. What is the average produce of cotton per beegah or acre?

The beegah varies much in each district. The acre has, therefore, been used in this calculation.

The returns from the different districts vary very much, and so indeed do the several subdivisions of each district. The Bijnour return appears to have been prepared with much care; in it the highest and the lowest average, and the general average produce of clean cotton per acre in each pergunnah is given. The highest in pergunnah Nujeebabad is 357 lbs. avoirdupois; the lowest, is Ufzulgurh Rehur 58 lbs.; the general average of the district is 162 lbs. per acre.

The Moradabad return gives an average of 247 lbs. per acre.

Budaon	-	-	-	-	360	„	„
Bareilly	-	-	-	-	128	„	„
Shahjehanpore	-	-	-	-	241	„	„

The average for the whole division is 227 lbs. per acre. This is greatly in excess of Dr. Royle's estimate of Indian cotton produce, which he considers not to average more than 100 lbs. per acre. I think it may have been somewhat overrated, and I feel disposed to accept the Bijnour average of 162 lbs. per acre in preference to the general one deduced above.

6. What

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 57

I.
Bengal and
North Western
Provinces.

6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried in the event of an increased demand?

	Quantity of Land now under Cotton Cultivation.	How far it could be Extended.
Bijnour - - - -	19,039 acres.	
Moradabad - - - -	50,000 acres.	
Budaon - - - -	34,091 acres - -	As far as 45,398 acres.
Bareilly - - - -	29,711 acres.	
Shahjehanpore - - - -	7,160 acres - -	As far as 11,733 acres.

The Collectors of Bijnour, Moradabad, and Bareilly, state that the quantity of land in their districts adapted for rearing cotton is very great, and if a remunerating price could be obtained for the article; that is, if its cultivation were more profitable than that of other produce, it could be grown to almost any extent.

3. The result of the inquiries instituted, proves that the average price of cotton, freed from seed, at the principal marts in this division, shortly after the crop has been gathered, is 2 d. per lb. avoirdupois, and that the ryut himself sells it at this rate, or perhaps a trifle cheaper.

4. The cost of packing and of conveying the article to Calcutta, which is the nearest port for shipment, has not been accurately ascertained. It is never so conveyed, and therefore the returns from Moradabad and Budaon on this head, can only be considered an approximation. Information on this point can be much better obtained at Agra and Calpee, or at other large marts on the Jumna and Ganges. I think it will be found that 1 d. per lb. will cover all expenses to Calcutta, and will leave a reasonable profit in the hands of the exporter.

5. This would raise the price of the cotton of this province to 3 d. per lb. in Calcutta, and this appears to be the price below which it cannot be sold in America. This too has for a series of years been its price at Bombay. I am not aware what the charge of freight from Calcutta or Bombay to Liverpool would be, but it would certainly exceed the charge from America to Liverpool.

6. It may therefore be safely assumed, that the actual cost of the cotton of this province, will, on its reaching Liverpool, exceed that of American cotton, nor does there appear to be any possibility of decreasing this cost; on the contrary, the export of cotton from this province in any large quantity would immediately raise its price, and so would all improvements on the culture of the plant, and the clean picking of the cotton.

7. The cause of this high cost of production is to be traced chiefly to the high price paid as rent for good cotton land. In the Bijnour district it is excessively high. For the whole of this division it cannot be estimated at less than four rupees per acre. Assuming the average produce per acre to be 162 lbs., and the market price of the article to be 2 d. per lb., it will be seen that one-half of the said price is composed of rent.

8. Nor is this high rent the result of the Government assessment. However moderate the demand of Government may be; nay, even if the land be rent-free; the rent charged to the ryut for good cotton land would be much the same.

9. The soil of Rohilkund appears to me to be well adapted to the production of cotton, this is proved by its vigorous growth, and if a remuneratory local price, say 3 d. per lb., could be obtained, its cultivation might be greatly extended. At present the total produce cannot be said to exceed the demand of the people of the province. A considerable quantity is imported from the country westward of the Ganges to Chundowree, whence it is taken by land carriage to the eastward, to Shahjehanpore and Oude.

10. The following Table shows that only 1-26th part of the cultivated area of this division is grown with cotton, and that the average produce available for each inhabitant is only five lbs. avoirdupois. This must barely suffice for the wants of the people.

DISTRICT.	Area of District in Acres.	Cultivated Area in Acres.	Extent of Cotton Cultivation in Acres.	Cotton Produce in Lbs. calculated at 162 lbs. per acre.	Population	Quantity of Cotton Produce to each Person.
Bijnour - - - -	1,218,561	503,083	19,039	3,084,318	620,546	5 lbs.
Moradabad - - - -	1,899,065	675,862	50,000	8,100,000	997,362	8 lbs.
Budaon - - - -	1,515,764	829,323	34,091	5,522,742	825,712	6 3/4 lbs.
Bareilly - - - -	1,880,163	949,879	29,711	4,813,182	1,143,637	4 1/2 lbs.
Shahjehanpore - - - -	1,589,308	674,645	7,160	1,159,920	812,588	1 1/2 lbs.
TOTAL - - - -	8,102,861	3,632,792	140,001	22,680,161	4,399,865	5 lbs.

I.
Bengal and
North Western
Provinces.

11. The cotton now grown in Rohilkund is inferior in quality and staple, and it is so full of impurities as greatly to deteriorate its value, and to render it unfit for the English manufacturer.

12. The chief cause of the inferiority of the cotton of this province, is to be found in the bad quality of the seed sown. The same has been sown from time immemorial in the same village. It may originally have been good; but it is in the nature of all seeds to deteriorate, if constantly reproduced in the same locality, unless great care be taken to prevent the process by attention to cultivation. This is not done. The seed originally bad, is sown broad-cast in a soil that is rarely manured, and in this province never irrigated. The plants come up most irregularly, generally so closely packed together as to interfere with their lateral growth, and occasionally a patch of several yards may be seen without a single plant, the seed having been washed away by the rains. In the same field, too, are sown inferior grains, such as oord, tilh, urhur, &c. The fields are weeded and the soil loosened about the roots of the plant, but not hoed; such is the process of cultivating the plant.

13. The second drawback upon the cotton of this province, is to be found in the impurities it contains. These are almost all attributable to carelessness in gathering. In America each cotton gatherer is provided with three pockets. Into No. 1 is put the very best and purest cotton, into No. 2 that of second quality, into the third the worst of all. In this country, the good, the inferior, and the refuse which falls to the ground and is attacked by insects and animals, are all put indiscriminately into one common bag, and all thereby contract so many of the dry friable particles of the leaves of the plant as to render their separation from the cotton a matter of great difficulty and expense. The American precaution is extremely simple, could readily be introduced, and would soon be appreciated by the natives, when they found that it secured to them a higher price for their produce.

14. In conclusion, I would strongly recommend that each collector of this division be supplied with a quantity of the best cotton seed from Central India. I would prefer the indigenous to foreign seed. That done, the rest may be left to nature and the ryot. Without this first necessary, improvement in the quality and staple of the cotton of this province is hopeless.

Commissioner's Office, Rohilkund Division, Bareilly, 29 September 1848.

I have, &c.
(signed) Henry Pidcock,
Commissioner.

(True copy.)

(signed) C. Allen,
Officg. Secy. to the Govt. of the N. W. P.

(No. 21 in No. 1500 of 1849.)—(No. 252).

From R. K. Dick, Esq., Collector of Bijnour, to Henry Pidcock, Esq., Commissioner of Rohilkund Division, Bareilly.

Sir,

I HAVE the honour to submit a statement, showing the information required by the Honourable the Court of Directors in their despatch, forwarded with your circular No. 23, dated 6th March last, regarding cotton.

As the beegah varies in every pergunnah, I have inserted the land in acres, and the quantity of produce in pounds avoirdupois.

The price is in Company's rupees, and is the usual rate at which cotton is sold wholesale soon after the crop comes into the market in an average season. The price of cleaned cotton freed from seed is given; uncleaned kupas sufficient to produce the same quantity would sell at the same price, as the seed will pay for the cost of cleaning it.

The cotton on this side of the Ganges is considered better than that produced in the Dooab, where much is imported into this district; the quantity exported is not great, as the demand in the hills for coarse cotton cloth, and wadded dresses and "resaies" for the cold season, is considerable.

There is abundance of land adapted for the growth of the country cotton, but the system of butae tenures, which so generally prevails, acts as a check on the extension of the cultivation under that system; the rent paid varies with the crop, and is very high on cotton*.

The

* Rent paid for cotton land per acre:

	Rs. a.	Rs. a.		Rs. a.	Rs. a.
Bijnour -	from 8	to 6	Afzulgurh -	from 7 9	to 2 6
Mundawur -	from 8	to 5	Dhampoor -	from 8	to 5 3
Daranuggur -	from 9 14	to 4 12	Sohara -	from 6 12	to 2 6
Najeebabad -	from 7 8	to 3 12	Rehtour -	from 9	to 4 12
Keeruthpoor -	from 10 8	to 3 13	Chandpoor -	from 8 4	to 4
Ukberabad -	from 6 12	to 5 10	Bashta -	from 8 4	to 1 14
Nugeenah -	from 9 0	to 6 6	Boorpoor -	from 9	to 2
Barhapoorah -	from 7 4	to 2 8			

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 59

I.
Bengal and
North Western
Provinces.

The most prevalent nominal rate is 4 s. 8 d. per beegah, but as the size of the beegah varies in every pergunnah, the actual rent also differs. The ryot therefore does not find it profitable to grow cotton except in the best lands; he is obliged in many places, by custom, to plant a certain quantity, but he reluctantly exceeds the prescribed amount. Moreover, the crop depends upon being carefully cleared from weeds early in the season, and at the same time the extensive sugar crops grown in this district, and the rice also, require the same process. The supply of labour does not equal the demand at that particular season, and therefore the cultivator finds it better to give up the cotton crop, and use the land that ought to produce cotton for rubbee.

The quantity of land cultivated with cotton measured by the survey twelve years ago was 18,183 acres; the amount in the present return is 19,039 acres, while cultivation has extensively increased in a much greater proportion.

I doubt whether the price which the cotton of this country is likely to command in the home market would cause the cultivation to be much extended here.

I have, &c.
(signed) R. K. Dick,
Collector,

Bijnour Collectorship,
12 August 1848.

(True copy.)
(signed) C. Allen,
Officiating Secy. to the Govt. of the N. W. P.

(Copy.)

(No. 22 in No. 1500 of 1849.)

STATEMENT of the QUANTITY of COTTON produced in Zillah Bijnour, with the MARKET PRICE, &c.

1. PERGUNNAHS.	2. Quantity of Land under Cotton Cultivation in Acres.	Estimated Average Produce of Clean Cotton per Acre in Lbs. Avoirdupois.			6. Total Estimated Quantity of Clean Cotton Produce, in Pounds.	Price in Pounds, per Rupee		9. Cost of Cleaning per 100 lbs.	10. Proportion of Clean Cotton in a given Quantity of Kupas.
		3. Highest Average.	4. Lowest Average.	5. Average of Pergunnah.		7. At which the Ryots Sell.	8. At Principal Markets.		
Bijnour - - - - -	1,641	190	102	133	217,550	12 -	11 4	2 -	5/17
Mundawur - - - - -	1,034	190	100	152	157,168	12 -	11 4	2 -	5/17
Daranugur, &c. - - - - -	1,456	228	80	155	226,360	12 -	11 4	1 12	5/17
Nujeeabad - - - - -	1,244	357	90	216	268,672	12 6	12 -	1 10	1/3
Keeruthpore - - - - -	1,090	288	100	170	184,110	12 -	10 8	1 12	5/16
Ukberabad - - - - -	812	250	120	160	127,725	12 -	11 4	2 -	5/17
Nugeenah - - - - -	1,152	241	120	228	263,545	11 4	10 8	2 2	1/3
Barhapoora - - - - -	827	240	180	188	156,064	11 4	10 8	2 2	1/3
Afzulghur Rehur - - - - -	1,383	268	58	170	234,656	12 -	10 8	2 2	1/3
Dhampoor - - - - -	1,806	242	110	168	303,220	11 4	10 8	1 14	5/17
Sohara - - - - -	1,179	180	120	165	194,985	12 -	11 4	2 2	5/8
Natore - - - - -	1,095	200	100	160	175,200	12 -	10 8	2 2	5/17
Chandpoor - - - - -	2,047	232	116	145	298,272	12 6	12 -	2 -	1/3
Bashta - - - - -	1,221	174	86	110	135,432	12 6	12 -	2 2	1/4
Boorpoor - - - - -	1,053	245	82	137	144,751	12 6	12 -	2 -	5/16
TOTAL - - - - -	19,039	357	80	162	3,087,710	12 -	11 -	2 2	From 1/3 to 1/4

REMARKS.—Cost of conveyance of 100 maunds, of 96 lbs. each, by the River Ganges to

	R.	A.	P.
Patna - - - - -	-	-	100
Benares - - - - -	-	-	60
Mirzapore - - - - -	-	-	55
Allahabad - - - - -	-	-	50
Cawnpoor - - - - -	-	-	30
Futtyghur - - - - -	-	-	22

The quantity of land has been taken from Putwaries papers for 1254 F. S. The average produce of each village has been assumed according to the supposed capability of the soil in an ordinarily favourable year, and the sum of the whole has been put in Column 6. The proportion of clean cotton to the "kupas" varies from $\frac{1}{4}$ to $\frac{1}{3}$; generally it is considered to be about $\frac{1}{4}$. The cost of cleaning, in Column 9, is that which is most generally considered the rate in the pergunnah; but the most usual mode is to give the cleaner the cotton seed for his trouble. This, however, is not so profitable as payment in money at the rate stated in the return, especially when the proportion of clean cotton is small; the seed sells at about one maund of 96 lbs. per rupee. No boats from this part of the country go below Patna, therefore the cost of conveyance is given to the intermediate marts on the Ganges; the additional cost from any one of them can be added.

Bijnour Collector's Office, }
12 August 1848.

(signed) R. K. Dick,
Collector.

(True Copy.)
(signed) C. Allen,
Officiating Secretary to the Government of the North Western Provinces.

I.
Bengal and
North Western
Provinces.

(No. 23 in No. 1500 of 1849.)—(No. 268 of 1848.)

From *J. C. Wilson, Esq.*, Collector of Moradabad, to *H. Pidgeon, Esq.*, Commissioner of Rohilkund Division.

Sir,

I HAVE now the honour to submit a reply to the several queries contained in the Court of Directors' despatch, No. 14, of the 10th November 1847.

2. The only cotton mart in this district of any consequence is that of Chundowree; and the details herein given with reference to the cotton trade are taken from that mart. The agricultural details are taken from the whole district.
- Question 1. 3. In the mart of Chundowree (rooe) cotton cleaned is now selling at *Rs. 10. 8.* the maund of 40 seers, each seer weighing 100 Queen Victoria rupees. The same cotton was sold by the ryots in October and November last, the season of cotton picking, for *Rs. 7. 8.* the maund. The present high price is owing to the absence of rain (13th July 1848), the monsoon not having yet commenced. Moradabad cotton is picked with greater care, and is much more free from leaf than the cotton of the Doab; and Doab cotton always sells in Chundowree 12 annas, or one rupee cheaper than Moradabad cotton, though the staple of the Doab cotton is much better than the staple of the Moradabad cotton; in fact, the staple of the cotton of this part of Rohilkund is the shortest and worst I have ever seen.
- Question 2. 4. Out of 100 ryots who cultivate cotton in this district, 90 sell it as kupass, viz., with the seed in it, and 10 sell it as rooe, viz., cleaned of seed. If (rooe) cleaned cotton, as was the case in October and November last, sells for *Rs. 9. 8.* the maund, (kupass) cotton with the seed in it sells for *Rs. 2. 8.* the maund. The general cause assigned for 9-10ths of the cultivators selling their cotton with the seed in it, is want of leisure. Before the instalments of the revenue were charged, and the date of payment was much earlier than it is at present, a cotton-growing ryot who had received advances from the banker used to sell his (kupass) cotton with seed in it to the banker at one seer more than the bazar rate of the season; that is to say, if the rate, as was the case in October and November last, was *Rs. 2. 8.* per maund, 16 seers were sold for a rupee. The ryot who had received advances would give his (kupass) cotton with seed in it to his banker at 17 seers for a rupee. This extra seer covered the interest for the two months or so that the ryot had enjoyed the advance; but now, in consequence of the Government revenue not being demanded till the ryots have had time to dispose of their produce, no advance is made, and no cheaper rate exists.
- Question 3. 5. A maund of (kupas) cotton with the seed in it gives from 15 seers to 12 seers of cleaned cotton, and 25 to 28 seers of (benowla) cotton seed. The cost of separating the seed of the cotton by the churkee is 1 rupee per maund, the churkee being the property of the owner of the cotton, and costing about five and a half annas; the cotton seed is also the right of the cotton owner. There is in this district no machine in use for cleaning cotton, save the churkee.
- Question 4. 6. Three annas per maund is the cost of cart-hire from Chundowree and Moradabad to the ports on the Ganges, Ramghat and Budrawl Ghat. Thence to Calcutta by water the conveyance is 8 annas per maund. Insurance thence to Calcutta *Rs. 2. 8.*, besides the cost of a peon called churrundar, who receives 50 rupees and who watches over one boat, which boat contains 700 maunds more or less of cotton. The cost of canvass for wrapping up a maund of cotton is 6 annas, and this sum includes the cost of the labour used in filling the bags. Cotton is not now compressed by screws in this district.
- Question 5. 7. Three maunds and eight seers of (rooe) cotton cleaned of the seed per acre is considered a very good return. Two maunds and sixteen seers per acre is about the average.
- Question 6. 8. The amount of (rooe) cotton freed from seed produced now in the Moradabad district is supposed to be 1,18,749 maunds, and the quantity of land under cotton cultivation is supposed to be about 50,000 acres.
9. Provided the ryots could be certain of a market in this district in which they could readily procure 10 Queen Victoria rupees for a maund, the cultivation could be increased to any extent.

Moradabad Collectorship,
21 July 1848.

I have, &c.
(signed) *J. C. Wilson*, Collector.

(True copy.)

(signed) *C. Allen*,
Officiating Sec. to the Govt. of the N. W. Provinces.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 61

I.
Bengal and
North Western
Provinces.

(No. 24 in No. 1500 of 1849.)—(No. 199.)

From *C. W. Fagan*, Esq., Collector of Budaon, to *H. Pidcock*, Esq., Commissioner of the Rohilkund Division.

Sir,

IN reply to your circular, No. 18, of the 29th February, forwarding copy of a letter from the Secretary to Sudder Board of Revenue, No. 529, of the 12th February, and your subsequent circular, No. 23, of the 6th March, on the same subject, I have the honour to reply that the necessary inquiries were made through the Mofussil officers in regard to the queries contained in the annexure to your letter, No. 14, of 1847, addressed by the Honourable the Court of Directors to the General Government. For facilitating reference the queries are noted below, and the replies.

1. What is the price of cotton, freed from seed, at the principal mart or marts in your district?

There are no large cotton marts in the district; the cotton is generally sold at the village markets, which periodically occur once or twice a week. The price of cleaned cotton in the market is generally five seers per rupee.

At what price does the ryot sell his cotton, cleaned or uncleaned, and with or without advance?

The practice of taking advances is not general, or rather very rare. The ryot sells his uncleaned cotton at 20 seers per rupee and his cleaned cotton at five seers per rupee.

3. What is the expense of cleaning cotton by the churkee or foot roller, or by any other method which may be in use?

The churkee is the only method of cleaning cotton prevalent in this district. The kupas, or cotton with the seed, yields one-fourth in clean cotton. The expense of cleaning is one rupee for five maunds.

4. What are the expenses of conveying cotton to the nearest port for shipment?

Cotton is not exported to any port for shipment from the eastern portion of this district. It is exported by the Ganges from the western, to Futtehghur, Cawnpore, Mirzapore, and Calcutta. The expense of conveying cotton to Calcutta is 85 rupees per 125 maunds.

5. What is the average produce of cotton per beegah, or acre?

The produce of cotton per beegah varies considerably. The highest may be considered 50 seers, and the lowest 20 seers per kutchha beegah of five beegahs to the acre. The average produce may be considered 35 seers per kutchha beegah.

6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried in the event of an increased demand?

The quantity of land under cultivation of cotton amounts to 1,70,454 kutchha beegahs, and the quantity to which the cultivation could be extended is estimated at 2,26,992 kutchha beegahs, amounting in the whole to 3,97,446 kutchha beegahs.

The denominations used are the company's rupees, the beegah of five to an acre, and the maund of 40 seers of 80 tolahs to the seer.

I have, &c.

(signed) *C. W. Fagan*, Collector.

Budaon Collectorship,
1 July 1848.

(True copy.)

(signed) *C. Allen*,
Officiating Sec. to the Govt. of the N. W. Provinces.

(No. 25 in No. 1500 of 1849.)—(No. 143 of 1848.)

From *F. Williams*, Esq., Collector of Bareilly, to *H. Pidcock*, Esq., Commissioner, Rohilkund Division.

Sir,

I HAVE now the honour to reply to your circulars, Nos. 18 and 23, dated respectively 29th February and 6th ultimo, on the subject of the cotton produce of this district.

2. Cotton is not cultivated to any extent in this district, that produced being far short of the quantity required for home consumption; nor does Bareilly appear to be suited in soil and climate to the improvement contemplated on either the growth of the plant or the extension of its cultivation.

3. I shall endeavour to reply to the queries subjoined to the Honourable Court's despatch of 10th November as nearly seriatim as possible.

296—Sess. 2.

H 3

1. Price

I.
Bengal and
North Western
Provinces.

1. Price of cotton, freed from seed, at the principal mart or marts?

There are only two large towns in the district, Bareilly and Pillibheet. The average price at these marts is 10 rupees per maund of 125 lbs. troy, or about 2*d.* per lb.

2. Price at which the ryot sells his cotton, cleaned or uncleaned, and with or without advances?

The ryot never cultivates cotton for purposes of trade. It is grown in quantities just sufficient for the cultivator's own use, or if for the market, still only to a very small extent, and this only as a secondary object, his primary purpose in cultivating it at all being the supplying of his want. Hence the cotton of the ryot brought into the market is always in a cleaned state, the seed being separated and retained for fodder for the cattle of his fields. Exceptions, of course, exist to this practice, and when the ryot is obliged to part with all his cotton, he will sell it in the pod, sometimes unplucked, the field as it stands being sold. The price of the cleaned cotton is the same as that of any other cotton, whether grown in the village or imported, and often equal to the price current in town. The "kuppas," or cotton in the pod, which is seldom, if ever, brought into market, is *Rs.* 2. 8. per maund. As the cultivation is always undertaken voluntarily, and for the cultivator's own use, no advances are made or received.

3. Expense of cleaning cotton and mode of doing so?

The process of cleaning cotton is of the rudest possible, viz., by the raintee or ryhutee, called also churka. The expense is paid in one of the three following modes:—1. When the cleaner takes the seed for his labour. 2. When he is paid in kind, *i. e.*, in grain of the cheapest kind, of equal weight to the cotton cleaned by him during the day; this amounts to about 9 or 10 pies in value, for he seldom works out more than four seers of cotton per diem, and four seers of saunttee (coarse rice), which he obtains, seldom exceed that in value. 3. By day labour, at one anna per diem, provided the cotton cleaned by evening weighs four, or about four seers.

4. Expenses of carriage to the nearest port for shipment?

I am not prepared to afford a correct estimate of this expense, and as Bareilly is not likely ever to supply sufficient cotton for exportation, it would be useless for me to delay my report till I can furnish the information.

5. Average produce of cotton per beegah or acre?

The inquiries on this point have elicited some interesting circumstances, showing the extent of the knowledge exercised by the natives in the culture of this important plant. The culturable land is divided into three classes:—1. Gowhane, comprising fields surrounding the village site, and extending to three khets or fields round. 2. Har, or munjha, three fields or khets beyond the gowhane. And, 3. Jungle or burha, all beyond the har. Cotton in the deis, or plains, is principally grown in the pergunnah of Aonla, where all the three classes of land are equally appropriated to its cultivation, but gowhane is preferred. In the Mar country, or tract lying in the Turæen pergunnahs, where also it is cultivated to a limited extent, the gowhane only is taken up for this purpose. The produce of the gowhane is always superior and more abundant than that of the other classes, but that of the Mar. Gowhane is described to be even inferior to the produce of the third class soil, or burha of Aonla. The general impression in the district appears to be that cotton thrives best on high table land, and requires a soil neither too dry nor too humid; that manure of cattle-dung is essential to the rapid development of the stems, branches, &c., and that accordingly the gowhane fields in immediate vicinity of the village, where the cattle are principally collected night and morning, are the best. The average proportion between the gross produce of these different classes of land and the quantity of pure cotton is given thus:—

1. Gowhane produce gives in every maund one-third of pure cotton.
2. Har gives 12 seers.
3. Burha gives 10 seers.

The first is ploughed five times before it receives the cotton seed; the second, or har, four times; and the burha three times. The seed sown is $1\frac{1}{2}$ seer per beegah, or about 7 seers 13 chuttacks per acre. The cost of weeding, a process twice performed before the pods are plucked, is from 4 to 10 annas per beegah, or from *Rs.* 1. 9. 3. per acre to *Rs.* 3. 14. 6. per acre. The produce is estimated to average as follows:—

	Kupas, or Uncleaned Cotton.			Pure Cotton.										
	Per Beegah.			Per Acre.										
	Mds.	Srs.	Chs.	Mds.	Srs.	Chs.								
In Gowhane land	0	32	0	5	0	0	0	10	10	$\frac{1}{2}$	1	26	9	$\frac{1}{2}$
In Har	0	28	0	4	15	0	0	8	8		1	12	8	
In Burha	0	20	0	3	5	0	0	5	0		0	31	4	

The

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 63

I.
Bengal and
North Western
Provinces.

The pods are ripe for plucking first in Kartik, or about the month of October, and the plucking continues from time to time till January. Except in cases of very healthy crops, the picking is resorted to every five or six days. One-tenth of the produce is appropriated by the parties employed in picking.

Picking.

My details are exceeding the limits of the question; but the average produce per acre being determined, it is necessary to show the cost of production, in order to show why Bareilly will not admit of its cotton cultivation being extended, a point noticed in the next, or 6th question.

Total cost of pro-
duction per
beegah.

The following tabular form gives the data, estimating this cost, and shows the profit or net return to the cultivator for every beegah of cotton cultivation on each class of land:—

CLASS of LAND.	Produce of One Beegah.			VALUE.			TOTAL EXPENSES OF PRODUCTION.								Net Profit or Return to Cultivator.
	Cotton.	Seed.	Total Produce.	Cotton.	Seed.	Total Produce.	Cost of Ploughing.	Cost of Seed.	Cost of Weeding.	Picking.	Cleaning.	Rent of Fields paid to Zemindar.	TOTAL.		
	<i>Mds. s. c.</i>	<i>Mds. s. c.</i>	<i>Mds. s. c.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	
1. Gowhancee	0 10 10½	0 21 5½	0 32 0	2 10 6	- 5 6	3 - -	- 8 4	- - 4	- 10 -	- 5 8	- 2 8	- 10 -	2 5 -	- 11 -	
2. Har	0 8 8	0 10 8	0 28 0	2 2 -	- 5 3	2 7 3	- 6 0	- - 4	- 8 -	- 4 4	- 2 2	- 8 -	1 13 4	- 9 11	
3. Barha	0 5 0	0 15 0	0 20 0	1 4 -	- 4 6	1 8 6	- 5 -	- - 4	- 4 -	- 2 8	- 1 3	- 6 -	1 3 3	- 5 3	

The produce per beegah here given is, of course, an estimate. In good seasons it may be more, in bad worse; but the cost of production is given from existing rates and recorded data, and may be considered as subject to very little variation.

6. Quantity of land under cotton cultivation in the district, and extent to which it is probable to increase it?

These considerations have already prepared us for a reply to the second part of the Court's 6th question. It is clear that with so small a profit the cultivator of cotton has no temptation to increase the extent to which he at present carries it. I have already stated that this is very limited in zillah Bareilly. The following table shows the total number of acres of cotton grown at present in the district compared with the entire cultivated area. I have endeavoured to show the produce in maunds and seers in the last columns.

PART of DISTRICT CULTIVATED.	Total Cultivated Area of Zillah in Acres.	Total Area Cultivated with Cotton.	Estimated Quantity of each Class of Land Cultivated with Cotton		Produce per Acre in Pucka Weight.	Total Produce of District.	Total Cotton of District.	
							Cotton.	Seed.
					<i>Mds. s. c.</i>	<i>Mds. s. c.</i>	<i>Mds. s. c.</i>	<i>Mds. s. c.</i>
Dels or Plains	877,009	26,841	Gowhancee	20,000	5 0 0	100,000 0 0	33,333 0 0	66,667 0 0
			Har	5,000	4 15 0	21,875 0 0	6,562 0 0	15,313 0 0
			Burha	1,841	3 5 0	5,753 0 0	1,438 0 0	4,315 0 0
				26,841	- - -	127,628 0 0	41,333 0 0	86,295 0 0
Mar	72,810	2,870	Gowhancee	2,870	3 5 0	8,969 0 0	2,284 0 0	6,685 0 0
TOTAL	949,879	29,711		29,711	- - -	136,597 0 0	43,617 0 0	92,980 0 0

Note.—The beegah used in the present report measures 2,725 yards, the pucka maund 125 lbs. troy, and the rupee is the Bareilly, Chullun, and Furruckabad rupee.

The cotton grown in the district, as already stated, is not sufficient for home consumption, there is therefore a large import from Chundowree, Hattaras, and other parts to the west. It is besides of the most inferior kinds, possessing not only the general fault of Indian cotton, that of being badly picked, so as to leave refuse particles of dry brads and leaves in the cotton, to a degree beyond the possibility of separating them, but wanting in both the length and the quality of the staple.

The physical causes against the improvement of this cultivation in this district have been already referred to. Dr. Royle, in his valuable essay on the productive resources of India, has pointed out that the black loamy soil of Central India is one cause of the superiority of the cotton of that part of the country. It is clear the Doab cotton is always far superior

64 PAPERS RELATING TO MEASURES TAKEN SINCE 1847

I.
Bengal and
North Western
Provinces.

to that of Rohilkund, and we know that the soil of the Doab differs as much from the arenaceous soil of the Bareilly district, as the climate here is more humid and more subject to early frosts.

Bareilly, Collector's Office,
26 April 1848.

I have, &c.
(signed) *F. Williams*,
Collector.

(True copy.)
(signed) C. Allen,
Officg. Secy. to the Govt. N. W. P.

(No. 26, in No. 1,500, of 1849.)—(No. 325, of 1848.)

From *F. P. Buller*, Esq., Collector of Shahjehanpore, to *Henry Pidcock*, Esq.,
Commissioner of the Rohilkund Division.

Sir,

No. 18, dated
February 1848.
o. 23, dated
March 1848.

WITH reference to your circulars, as per margin,* and to the queries contained therein, I have the honour to reply as follows:

1st. The average price of cotton freed from seed at the only large mart in this district, viz., the city of Shahjehanpore, is *Rs. 10. 13. 9.* per maund of 111 Company's rupces to the seer. In other inferior marts it is *Rs. 10. 3. 9.* per maund.

2d. The ryutt sells his cotton uncleaned at an average rate of *Rs. 2. 8. 6.* per maund. He never sells it cleaned, nor does he take advances.

3d. No other method of cleaning cotton is used but the churkhee. If the cotton cleaner uses his own churkhee, besides all the seed, he gets coarse grain, such as barley, or grain, equal in weight to the cotton cleaned. If the churkhee belongs to the owner of the cotton, the cleaner only gets the seed in payment of his trouble.

4th. No cotton is exported from this district, but is imported into it from the westward. The expense of exporting grain, &c. to the neighbouring district of Furruckabad, is *Rs. 9. 8.*, or 6 annas per maund, according to the distance from which it is transported.

5th. The average produce of cotton is 2 maunds 4 seers 8 chittacks per acre, or 1 maund 4 seers 7 chittacks per pucka beegah of 2,916 square yards. The former quantity contains 1 maund 23 seers 4 chittacks of seed and 21 seers 4 chittacks clean cotton; the latter 33 seers 3 chittacks seed and 11 seers 4 chittacks clean cotton.

6th. The quantity of land under cultivation with cotton is 7,160 acres, or 13,616 pucka beegahs. In the event of an increased demand, about 4,573 acres more could be made available for the purpose. These particulars have been ascertained from a most careful inquiry, mouzawar.*

Shahjehanpore, Collector's Office,
28 August 1848.

I have, &c.
(signed) *F. P. Buller*,
Collector.

(True copy.)
(signed) C. Allen,
Officg. Secy. to the Govt. N. W. P.

(No. 27, in No. 1,500, of 1849.)—(No. 408.)

From *W. H. Tyler*, Esq., Officiating Commissioner of the Agra Division, to *W. Muir*, Esq.,
Secretary Sudder Board of Revenue, N. W. P.

Sir,

WITH reference to your docket of the 18th February last, No. 52, forwarding copies of a letter and of its enclosure from the Secretary to the Government of India, requesting information as to the extent to which India might be capable of supplying cotton in the event of an increased demand, I have the honour to submit the accompanying statement prepared in this office, exhibitory of the amount to which the cultivation of cotton can probably be extended in the districts comprising the Agra Division, with prices at which it can be procured in a cleaned or uncleaned state, at the marts or from the growers, with memorandum of cost of transit to nearest port of shipment. The answers received from the collectors are also submitted.

Commissioner's Office, Agra Division,
10 November 1848.

I have, &c.
(signed) *W. H. Tyler*,
Officiating Commissioner.

(True copy.)
(signed) C. Allen,
Officg. Secy. to the Govt. of the N. W. P.

* Village by village.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 65

(No. 28, in No. 1500 of 1849.)—(No. 87.)

From *E. Thornton*, Esq., Collector of Muttra, to *W. H. Tyler*, Esq., Officiating Commissioner of the Agra Division.

Sir,

I HAVE the honour to acknowledge the receipt of your letter, No. 13, dated the 25th ultimo, and of its accompaniments. I proceed to give the answers to the several questions.

1st. The average price of cotton freed from seed, at the principal mart in this district, is stated to be *Rs.* 7. 2. 8. per maund of first class cotton, and *Rs.* 6. 3. 5. per maund of second class cotton.

2d. The average price the cultivator obtains is stated to be *Rs.* 6. 13. for clean cotton, and *Rs.* 2. 4. 2. for uncleaned cotton. In this district the cultivator is generally obliged to part with it before it can be cleaned.

3d. The expense of cleaning cotton averages one rupee per maund of clean cotton.

4th. The expense of conveying cotton from this district to Calcutta, is *Rs.* 1. 15. per maund, viz, one rupee for boat hire, seven annas for packing, and eight annas insurance.

5th. The average produce of cleaned cotton per acre is two maunds and eight seers.

6th. The quantity of land under cotton cultivation is 103,042 acres. I am under the impression that a very much larger portion of the 761,277 acres which form the cultivated area of this district, perhaps one-third, would produce cotton.

The rupee is that described in Section 1, Act XVII. of 1835, and the maund that described in Section 4, Act VII. of 1833.

I have, &c.
(signed) *Edward Thornton*,
Collector.

Zillah Muttra Collector's Office,
23 May 1848.

(True copy.)

(signed) C. Allen,
Officiating Secy. to the Govt. of the N. W. P.

(No. 29, in No. 1500 of 1849.)—(No. 284.)

From *C. C. Jackson*, Esq., Collector of Agra, to *W. H. Tyler*, Esq., Officiating Commissioner of Revenue, Agra.

Sir,

IN reply to your letter of the 25th March last, No. 13, forwarding copies of a letter, and of its enclosure, from the Secretary to Government of India to the address of the Secretary to the Government N. W. Provinces, of the 15th January last, I have the honour to submit replies to the queries of the Court of Directors relative to the growth, cleaning, and shipment of cotton from the Agra district.

Zillah Agra Collector's Office,
24 August 1848.

I have, &c.
(signed) *C. C. Jackson*.

(True copy.)

(signed) C. Allen,
Officiating Secy. to the Govt. N. W. P.

(No. 30, in No. 1500 of 1849.)

Question 1. What is the price of cotton, freed from seed, at the principal mart or marts in your district?

Answer. There are four large marts in this district, Agra, Kuchowrah, with Bah in its neighbourhood, Ferozabad, and Jugneer. The average prices during the past official year, ending 30th April 1848, were, at Agra, *Rs.* 17. 3. per maund; at Kuchowrah, *Rs.* 7. 14.; at Ferozabad, *Rs.* 7. 3.; and at Jugneer, *Rs.* 6. 10.

A large portion of that disposed of at Agra, Jugneer, and Kuchowrah, is the produce of the neighbouring independent states of Gwalior, Kerowlee, and Tonk.

2. At what price does the ryot sell his cotton, cleaned or uncleaned, and with or without advances?

The ryot sells his cotton to the money-lender, from whom he receives advances for its growth, at a price varying from eight annas to a rupee below the bazar rate. The system
296—Sess. 2. I of

I.
Bengal and
North Western
Provinces.

I.
Bengal and
North Western
Provinces.

of making advances for such produce is not in general use in this district. Those who cultivate without advances, dispose of the article at the price of the day, which varies according to its distance from the nearest mart.

3. What is the expense of cleaning cotton by the churka, or foot roller, or by any other method which may be used?

Cotton is cleaned by the churka at an expense of one rupee per maund, but the labourers are not usually paid in cash; they willingly clean a maund of cotton, and take the cotton seed, or benowlah, in remuneration for their trouble.

4. What are the expenses of conveying cotton to the nearest port for shipment?

Cotton grown in the district is brought in to Agra and Kuchowrah for shipment in boats at an expense of two, three, and four annas a maund, with reference to the distance of its place of growth from the river Jumna. The expense of conveying cotton by boats to Calcutta, which is the nearest seaport, either from Agra or Kuchowrah, is about a rupee per maund. It is ordinarily conveyed to Mirzapore, on the River Ganges, at a charge of seven to eight annas per maund, to be there reshipped for Calcutta.

5. What is the average produce of cotton per beegah, or acre?

One acre of land produces 1 maund and 15 seers of cotton, or, avoirdupois weight, 3 qrs. 29 lbs. 2 oz. 4 drs.

6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried in the event of an increased demand?

In the Agra district, land to the extent of 87,000 acres is cultivated with cotton; 33,000 acres more, adapted for its culture, might be sown, if a more ready market could be found for the produce.

(signed) C. C. Jackson, Collector.

Zillah Agra Collector's Office,
24 August 1848.

(True copy.)

(signed) C. Allen,
Officiating Secy. to the Govt. N. W. P.

(No. 31, in No. 1500 of 1849.)—(No. 223 of 1848.)

From C. Raihes, Esq., Officiating Collector of Furruckabad, to W. H. Tyler, Esq.,
Officiating Commissioner of Agra.

Sir,

In reply to your circular, No. 13, dated 25th March last, with its enclosures, on the subject of the produce of cotton in this district, I have now the honour to submit the information required by Government.

Query 1. What is the price of cotton, freed from seed, at the principal mart or marts, in your district?

Answer. The principal mart is the town of Furruckabad, where cotton freed from seed is sold at three different rates, according to quality, viz., at 11, 12 and 13 rupees per maund, calculated by the large weight of 96 rupees to the seer.

2. At what price does the ryot sell his cotton, cleaned or uncleaned, and with or without advance?

The ryot sells only the uncleaned cotton, and the purchaser is generally the Beorah, or moneylender, with whom he has dealings, and who buys it at something less than the prevailing market rate.

It is not customary in this district to make advances specially for the cultivation of cotton.

3. What is the expense of cleaning cotton by the churkha or foot-roller, or by any other method which may be in use?

The process of cleaning is that of the churkha alone. The seed of the cotton is given in exchange for the labour of cleaning it, or otherwise, eight annas per maund. One maund of cotton is estimated to contain 28 seers of seed.

4. What are the expenses of conveying cotton to the nearest port for shipment?

The distance of the ghat from the town is two coss; the expense of carriage is one anna per maund.

5. What is the average produce of cotton per beegah, or acre?

Good soil yields two maunds per pucca beegah, and inferior soil, one maund of raw cotton.

6. What

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 67

I.
Bengal and
North West
Provinces.

6. What is the quantity of land under cultivation with cotton, and what extent is it probable that the cultivation could be carried in the event of an increased demand?

Agreeably to the return of produce of 1255 F. S., 14,148 acres are found to be under cotton cultivation this year.

2d. The local officers of the district have given it as their opinion, after making detailed inquiries, that 7,008 acres more might be made available for cotton cultivation, if required. But as any land that lies high and is irrigable may be made to produce cotton by labour and manure, it is not easy to fix a limit on the extent of cotton cultivation which might result from high prices.

Furruckabad Collectorate,
24 July 1848.

I have, &c.
(signed) C. Raikes,
Officiating Collector.

(True copy.)

(signed) C. Allen,
Officiating Secy. to the Govt. of the N. W. P.

(No. 32 in No. 1,500 of 1849.)—(No. 302 of 1848.)

From R. Thornton, Esq., Officiating Deputy Collector of Furruckabad, to W. H. Tyler, Esq., Officiating Commissioner of Agra.

Sir,

IN reply to your letter, No. 300, dated 26th ult., relative to the cost of carriage of cotton to Calcutta, I have the honour to state for your information, that the cost falls at an average of 8 annas 4 pie per maund. The hire of a boat capable of holding 250 bales, the usual load, is 325 rupees, and each bale contains 2½ maunds.

Furruckabad Collectorate,
19 October 1848.

I have, &c.
(signed) R. Thornton,
Officiating Deputy Collector.

(True copy.)

(signed) C. Allen,
Officiating Secy. to the Govt. of the N. W. P.

(No. 33, in No. 1500 of 1849.)—(No. 218 of 1848.)

From Henry Unwin, Esq., Collector of Mynpoory, to W. H. Tyler, Esq., Officiating Commissioner Second Division, Agra.

Sir,

I HAVE the honour to furnish the answers required to the questions put in the extract from despatch of the Court of Directors. They are the result of inquiries made by the Deputy Collector Jumaloddeen, to whom Mr. C. Raikes deputed the task of collecting accurate information.

The mart of Phurha, once flourishing, is now nearly superseded by that of Agra for cotton. That of Sirsa Gunge is still a very large one, and if a metal road from that place to Bikrampoor Ghat were constructed, it would much facilitate the conveyance of cotton. My attention will be turned to this subject in the next cold season.

Mynpoory Collector's Office,
2 September 1848

I have, &c.
(signed) H. Unwin,
Collector.

(True copy.)

(signed) C. Allen,
Officiating Secy. to the Govt. of the N. W. P.

(No. 34, in No. 1500 of 1849.)

Answers to the Court of Directors' questions on the Price, Growth, &c., of Cotton in Zillah Mynpoory.

Question 1. What is the price of cotton, freed from seed, at the principal mart or marts in your district?

Answer. There are two principal cotton marts in this district, viz., Phurha and Sirsa Gunge. The average price of cotton free from seed, calculated on the past 10 years at these two marts, is as follows, viz.:

	Rs.	as.	p.	
Phurha	-	-	7 14	per ma und of 40 seers, Government standard.
Sirsa Gunge	-	-	8 - 6	ditto ditto ditto.
296—Sess. 2.			I 2	2. At

I.
Bengal and
North Western
Provinces.

2. At what price does the ryot sell his cotton, cleaned or uncleaned, and with or without advances?

The ryot brings his cotton cleaned to the above marts at *Rs.* 7. 14. and *Rs.* 8. 0. 6. per maund, as given above. When advances are made five months previously, he abates one rupee per maund on those rates, and for short periods of advance, *i.e.*, 10 or 20 days, an anna or two, according to agreement.

3. What is the expense of cleaning cotton by the churka or foot-roller, or by any other method which may be in use?

It is customary to pay the cleaning cotton, either with the seed freed from the quantity cleaned, or 8 as. per maund of Government standard. Good uncleaned cotton generally produces 10 seers of cotton and 30 seers of seed, considered equivalent in value to 8 annas.

4. What are the expenses of conveying cotton to the nearest port for shipment?

The charge for conveying cotton from Phurha to Chundwa Ghat on the Jumna, in the Agra district, the nearest port, is generally 2 annas; and from Sirsa Gunge to Bikrampoor Ghat on the Jumna in the Etawah district, 1 anna per maund. This rate, however, often fluctuates.

5. What is the average produce of cotton per beegah or acre?

According to the best obtainable information, for there are no official returns of produce, the average produce of cotton per pucca beegah may be taken at 7 maunds, or something less than 13 maunds per acre.

6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation would be carried in the event of an increased demand?

Twenty-nine thousand two hundred and ninety acres is the quantity of land ascertained to have been under cultivation with cotton in one year; much of the soil of this district is favourable to the growth of cotton, and its cultivation could be carried on to a great extent, according to the demand.

(signed) *H. Unwin*, Collector.

(True copy.)

(signed) *C. Allen*,
Officiating Secy. to the Govt. of the N. W. P.

(No. 35, in No. 1500 of 1849.)—(No. 261 of 1848.)

From *H. Unwin*, Esq., Collector of Mynpoory, to *W. H. Tyler*, Esq., Officiating Commissioner Second Division, Agra.

Sir,

IN reply to your letter (No. 181), dated 26th ult., I have the honour to state that it is impossible to ascertain the expense of carriage further than to Mirzapore, to which place cotton is conveyed by boats from Chundwar and Bikrampoor Ghats, at the rate of three maunds per rupee.

Mynpoory Collector's Office,
10 October 1848.

I have, &c.
(signed) *H. Unwin*,
Collector.

(True copy.)

(signed) *C. Allen*,
Officiating Secy. to the Govt. of the N. W. P.

(No. 36, in No. 1500 of 1849.)—(No. 137 of 1848.)

From *J. A. Craigie*, Esq., Officiating Collector of Etawah, to *W. H. Tyler*, Esq., Officiating Commissioner, Agra Division.

Sir,

I HAVE now the honour to submit in a tabular, as the most convenient form, the information called for in your circular (No. 13) of 13th March.

2. The table has cost some trouble, I therefore trust the delay may be overlooked. I also endeavoured to draw up some notes on the subject; but it has occupied the attention of Government so deeply of late, that my inquiries could not tend, I am sure, to throw any additional light on the point; but the attempt may be received, I trust, as an additional apology for not replying to your orders sooner.

Zillah Etawah Collectorship,
7 September 1848.

I have, &c.
(signed) *J. A. Craigie*,
Officiating Collector.

(True copy.)

(signed) *C. Allen*,
Officiating Secy. to the Govt. of the N. W. P.

STATEMENT exhibitory of the Amount to which the Cultivation of Cotton can probably be extended in Zillah Etawah, with Prices at which it can be procured in a clean or uncleaned state, at the Marts, or from the Growers, with Memorandum of Cost of Transit to nearest Port for Shipment.

295—Sess. 2.

I 3

NAME of PERGUNNAH.	Price of Cleared Cotton (per Maund, of 102 Company's Rupees to the Seer) sold at the Marts.	COTTON SOLD BY RYUT PER MAUND.				Expense of Cleaning Cotton by the Foot-roller or Rehtee, per Maund.	Expense for Conveying Cotton to the nearest Port for Shipment, i. e. Calcutta.	Average Produce of Cotton per Beegah.		Quantity of Land under Cultivation with Cotton.	Probable Extent of Cultivation in event of an Increased Demand.
		Cotton Cleaned,		Uncleaned Cotton,				Uncleaned.	Cleaned.		
		With Advances.	Without Advances.	With Advances.	Without Advances.						
	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	Minimum per 100 Mds. to Calcutta : Rs. 93 12 - Maximum 112 8 - Average - 103 2 - or - Rs. 1 - 6 per Maund.	<i>Mds. sr. c.</i>	<i>Mds. sr. c.</i>	<i>Acres.</i>	<i>Acres.</i>
Etawah - - -	9 - -	8 7 -	9 - -	2 13 -	3 - -	1 - -		2 10 0	0 30 0	8,328	11,900
Delhie Jakhun - - -	8 8 -	8 7 -	8 8 -	2 14 10	3 - -	1 4 -		2 10 0	0 30 0	4,263	6,394
Lucknah - - -	9 - -	8 12 -	9 - -	3 - -	3 4 -	1 4 -		2 10 0	0 30 0	5,771	6,815
Rawuen - - -	8 12 -	8 10 -	8 12 -	2 14 -	2 15 -	1 4 -		3 0 0	1 0 0	4,686	5,857
Belah - - -	9 - -	8 14 -	9 - -	2 14 -	3 - -	1 - -		2 10 0	0 30 0	6,800	8,500
Phuppond - - -	8 4 -	7 12 -	8 4 -	2 8 -	2 12 -	1 - -		2 0 0	0 26 4	9,432	10,090
Oreyah - - -	9 - -	8 10 -	9 - -	2 10 -	3 - -	1 2 -	2 0 0	0 26 4	10,396	11,390	
TOTAL - - -	61 8 -	59 8 -	61 8 -	19 9 10	20 15 -	7 14 -	- - - - -	16 0 0	5 12 8	49,676	60,946
AVERAGE - -	8 12 6 ½	8 8 -	8 12 6 ½	2 12 10	2 15 10 ½	1 2 -	- - - - -	2 11 7	0 30 5 ½	-	-

Zillah Etawah Collectorship,
7 September 1848.

(True copy.)

(signed) J. A. Craigie,
Officiating Collector.

(signed) C. Allen,
Officiating Secretary to the Government of the N. W. Provinces.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 69

I
Bengal and
North Western
Provinces.

(No. 38, in No. 1500 of 1849.)

STATEMENT exhibitory of the Amount to which the Cultivation of Cotton can probably be extended in the Districts comprising the AGRA DIVISION, with Prices at which it can be procured in a Cleaned or Uncleaned State at the Marts, or from the Growers, with Memorandum of Cost of Transit to nearest Port for Shipment.

DISTRICTS.	Price of Cleaned Cotton per Maund.	COTTON SOLD BY RYOT, PER MAUND.				Expense of Cleaning Cotton by the Foot-roller, or Rehtee, per Maund.	Expense for conveying Cotton to the nearest Port for Shipment, <i>i. e.</i> Calcutta.	Average Produce of Cotton per Acre, or Beegah.		Weight used,	Quantity of Land under Cultivation with Cotton.	Probable Extent of Cultivation in the event of Increased Demand.
		Cleaned Cotton,		Uncleaned Cotton,				Cleaned.	Uncleaned.			
		With Advance.	Without Advance.	With Advance.	Without Advance.							
Muttra	<i>Rs. a. p.</i> 1st Class 7 2 8 2d " 6 3 5	<i>Rs. a. p.</i> - - -	<i>Rs. a. p.</i> 6 13 -	<i>Rs. a. p.</i> - - -	<i>Rs. a. p.</i> 2 4 2	<i>Rs. a. p.</i> 1 - -	<i>Rs. a. p.</i> Per maund to Calcutta. 1 - -	<i>Ms. s. c.</i> 2 8 0 per acre.	- - -	80 rupees to the seer.	<i>Acres.</i> 103,042	<i>Acres.</i> 253,759
Agra	7 6 2	Something less than the bazar rate				1 - -	Per maund to Calcutta. 1 - -	1 15 0 per acre.	- - -	80 ditto	87,000	120,000
Furruckabad	1st Class 13 - - 2d " 12 - - 3d " 11 - -	Something less than the prevailing market rate				- 8 -	Per maund to Calcutta. - 8 4	From 1 0 0 to 2 0 0 Per beegah of 3,600 square yards.	- - -	96 ditto	14,148	21,156
Mynpoory	7 8 -	- - -	7 8 -	- - -	- - -	- 8 -	Per maund to Mirza- pore - 5 4	- - -	7 0 0 Per beegah of 3,600 square yards.	80 ditto	29,290	Can be in- creased ac- cording to demand.
Etawah	8 12 6½	8 8 -	8 12 6½	2 12 10	2 15 10½	1 2 -	Per maund to Calcutta. 1 - 6	2 11 7 Per beegah of 3,600 square yards.	0 30 5½	102 ditto	49,676	60,676

Commissioner's Office, Agra Division,
10 November 1848.

(signed) W. H. Tyler,
Officiating Commissioner.

(True copy.)
(signed) C. Allen,
Officiating Secy. to the Govt. of the N. W. P.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 71

(No. 39, in No. 1500 of 1849.)—(No. 411 of 1848.)

From *R. Lowther*, Esq., Commissioner of the Allahabad Division, to the Sudder Board of Revenue, North Western Provinces, Agra.

I.
Bengal and
North Western
Provinces.

Gentlemen,

WITH reference to the orders of Government, N. W. Provinces, dated the 12th February last, No. 529, and its enclosure, received with your secretary's docket of the 18th idem, No. 79, respecting the extent to which India might be capable of supplying cotton in the event of an increased demand for it; I have the honour to submit, as per annexed list, returns from the district officers, containing the information required by the Honourable Court of Directors.

Revenue.

Commissioner's Office,
Fourth Division, Allahabad,
12 August 1848.

I have, &c.
(signed) *R. Lowther*, Commissioner.

(True copy.)

(signed) C. Allen,
Officiating Sec to the Govt. of the N. W. Provinces.

(No. 40, in No. 1500 of 1849.)—(No. 53 of 1848.)

From *R. Montgomery*, Esq., Collector of Cawnpore, to *R. Lowther*, Esq., Commissioner of Revenue, Fourth Division, Allahabad.

Sir,

I HAVE the honour to acknowledge the receipt of your circular letter of 28th February, No. 8, transmitting copy of a letter from Mr. Secretary Thornton to the address of the Secretary, Sudder Board of Revenue, dated 12th idem, requesting information as to the extent to which India might be capable of supplying cotton in the event of an increased demand, and also a second letter from you, dated 6th instant, forwarding copy of a letter, No. 75, from the Secretary to Government of India, Home Department, dated 15 January last, and its enclosures, which contained certain queries regarding cotton, replies to which were solicited.

Circular, No. 9.

2d. In reply to the first letter, I am unable to state the amount of cotton which might be supplied from this country, but my deputy collector, Mr. Bruce, has had considerable experience, having formerly speculated largely in cotton, and having turned much of his attention to the subject; as he will furnish a separate report, I will briefly reply to the queries transmitted by the Court of Directors.

Query 1. What is the price of cotton, freed from seed, at the principal mart or marts in your district?

Answer. The price of cotton freed from seed is from nine to ten rupees per maund, and has varied little from that price during the last two years.

2. At what price does the ryot sell his cotton, cleaned or uncleaned, and with or without advances?

The uncleaned cotton (termed kupas) is sold from 13 to 16 seers in the rupee. Advances are occasionally given, but more frequently they are not made in this district. If advances are given, the banker charges 60 per cent. interest; he gets one-fourth advance on the rate at which cotton is sold when it is ready for the market. For instance, if 16 seers is the rate at which cotton is sold, the cultivator gives the banker 20 seers. This is termed "sewai."

3. What is the expense of cleaning cotton by the churka, or foot-roller, or by any other method which may be in use?

The expense is one rupee per maund. The churka is the only machine used.

4. What are the expenses of conveying cotton to the nearest port for shipment?

Supposing Calcutta to be the port, it is one rupee per maund for the mere carriage in unscrewed bales.

5. What is the average produce of cotton per beegah or acre?

Three maunds of kupas per beegah or six per acre. From this, one maund of pure cotton, and two maunds of benowla or seed is produced per beegah.

6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried in the event of an increased demand?

1,01,111 acres of land was under cultivation, according to the measurement effected in 1839-40. I imagine this amount could easily be doubled, was there any encouragement to extend the cultivation.

I.
Bengal and
North Western
Provinces.

The beegah in this district is 2,450 square yards, or $\cdot 50625$ of an acre.
The seer is $97 \frac{2}{3}$ sicca weight; the maund consists of 40 seers; the punseree, or five seers, of 48 \cdot 7 rupees.

Cawnpore Collector's Office,
15 March 1848.

I have, &c.
(signed) *R. Montgomery*, Collector.

(True copy.)
(signed.) C. Allen,
Officiating Sec. to the Govt. of the N. W. P.

(No. 41, in No. 1500 of 1849.)—(No. 52 of 1848.)

From *J. G. Bruce*, Esq., Deputy Collector of Cawnpore, to *R. Lowther*, Esq., Commissioner of Revenue, Fourth Division, Allahabad.

Sir,

I HAVE the honour to acknowledge the receipt of your letters, No. 8 of the 28th ultimo, and No. 9, dated the 6th instant. The first transmitting a copy of one from Mr. Secretary Thornton to the address of the Sudder Board of Revenue, N. W. Provinces, and requesting that I would furnish the information called for respecting the extent to which India is capable of supplying cotton in the event of an increased demand for it; and the second transmitting a copy of the letter, No. 75, from the Secretary to the Government of India, Home Department, dated the 15th January last, and of the enclosure which accompanied it, respecting the information required by the Honourable the Court of Directors regarding the quantity of cotton produced in India.

2d. Having been employed at the late commercial residency of Etawah and Calpee from its first establishment in 1808 till its dissolution with the cession of the Company's trade in 1834, as accountant and supervisor of the Company's cotton investment, and having on the abolition of the residency been engaged myself extensively for four years subsequently in the purchase of cotton on my own account, as well as on commission for several agency houses in Calcutta, and having been accustomed to form and submit one general estimated average of the cotton intended for consignment to the London and China markets, upon the prices annually prevailing at the several marts in the N. W. Provinces, I am humbly of opinion it would be more to the purpose to reply in the same manner to the queries propounded by the Honourable the Court of Directors, than were I merely to confine my information to any one single district or mart.

3d. I have the honour to annex below my replies opposite to the queries contained in the despatch of the Honourable the Court of Directors.

Query 1. What is the price of cotton, freed from seed, at the principal mart or marts in your district? *

Reply. The price depends principally upon the demand and produce. In an average season, however, cotton at the place of produce, fit for the London market, may be estimated at seven Co.'s rupees per maund of 80 Co.'s rupees to the seer, equal to 14 s. for 80 lbs. The cotton fit for the China market may be estimated at one rupee less per maund.

2. At what price does the ryot sell his cotton, cleaned or uncleaned, and with or without advances?

The ryot who can manage his cotton cultivation without the aid of an advance realises about six rupees a maund of the seer of 96 Company's rupees for his clean cotton.

The poorer classes of cultivators, however, have little concern with the sale of their cotton. After the seed is sown at the commencement of the periodical rains, they require the aid of the village bunneahs or bankers to enable them to weed and attend to their cotton and other crops, which, from the time the assistance is granted, become in a manner mortgaged to the bunneahs, at least they have the entire disposal of the produce. Owing to this circumstance, the kupas, or cotton with the seed, as it is gathered is made over to them, who separate the cotton from the seed, and sell it to repay themselves. The cultivators in this case seldom realise more than Rs. 4. 8. for their maund of clean cotton.

3. What is the expense of cleaning cotton by the churka or foot roller, or by any other method which may be in use?

Properly speaking, the separation of the cotton from the seed in this country costs nothing; whether the work is performed by the cultivator, or the person to whom he sells it unfreed, the price the seed realises when sold more than covers the amount of labour.

4. What are the expenses of conveying cotton to the nearest port for shipment?

Including the expense of cleaning and screwing the cotton, gunnies and other packing materials, boat-hire, export duty, and everything else, an average of about Co.'s Rs. 2. 3. per maund of 80 Company's rupees to the seer, to Calcutta from the place of produce.

5. What

5. What is the average produce of cotton per beegah or acre?

Generally a maund per beegah, 96 Company's rupees to the seer, or two maunds eight seers the acre, where the cultivation is properly attended to.

6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried in the event of an increased demand?

In the year 1818, the largest quantity of cotton (*vide* my address to you of the 2d April 1846) was exported by sea from Calcutta, viz. ; near 1,200,000 maunds; we may therefore, I think, safely calculate upon an equal quantity having been produced and retained in that year for the consumption of the N. W. Provinces as well as Bengal. If my data be tolerably correct, there must have been about 2,400,000 beegahs of land under cotton cultivation in that year; what it may now amount to, must be considerably less; but to what extent it could be carried, in the event of an increased demand, it will not be difficult to tell.

4th. Having replied to the questions in the despatch of the Honourable the Court of Directors, I shall now proceed respectfully to offer a few more general remarks on the same subject, which my experience and recent inquiries of native wholesale dealers in the article suggest.

5th. You must have observed during the last twelve months how strenuously the Honourable the Court of Directors, the Board of Control, and even the House of Commons, have been memorialised, urged, and solicited by the Liverpool, Manchester, Lancashire, Hull, and other commercial and manufacturing associations, regarding the increased cultivation of cotton in India.

6th. From the purport of these memorials, as well as the remarks of the press in India, the real merits of the question appear to be wholly misunderstood. I beg leave to observe that on this side of India, neither the land-tax nor the transit dues are tremendous, as asserted by the "Calcutta Press;" nor do they amount to anything like 75 per cent. on the average value of cotton, as represented by the "Hull Advertiser." What they may be at Bombay or Madras I cannot exactly say, but I am inclined to suppose far from what they have been designated. All the amelioration that would be required, it appears to me, would be to place the Bundelkund cotton and the produce of the right bank of the Jumna generally upon the same footing as that of the Doab; namely to levy the duty on the exportation of the cotton from Calcutta. The evil of making the Bundelkund cotton and that of the right bank of the Jumna pay the duty before it can be boated, is, in fact, a tax upon the land under cotton cultivation.

7th. If the associations and manufacturers who have been memorialising and soliciting the authorities in England regarding the increased cultivation of cotton in India, actually wish for it, and will guarantee that all that may be produced through my exertions in this country, will be taken by them, and paid for here, and will send out responsible agents to receive charge of the cotton, either here or at Calcutta, I will engage and undertake to produce for them as much real good merchantable cotton as they may require, and not to cost them when landed in England more than about 3 ½ d. per lb., which I think very moderate, considering the Indian cotton generally realizes from 4 ½ d. to 5 ½ d. per lb. in England.

8th. The decrease of cultivation everywhere in India may be ascribed solely to the want of a demand for the article. If the Government, even through the means of advances to the cultivators increased it, to meet the solicitations of the associations in England, I apprehend that as soon as those advances ceased, the culture would again revert to its former standard, owing to the poverty of the landholders and ryots.

9th. If the associations be of opinion that the indigenous cotton, of a good staple and quality, be desirable at my estimated average of 3 ½ d. per lb., the most eligible plan, it appears to me, would be to purchase it through the beoparies, or native cotton merchants, as was done before for the Company when they traded in the article, and to leave the beoparies to get it from the cultivators as they formerly did, and now do, to the extent of their wants, through the village bunneas or bankers. If the native merchants found the speculation advantageous (very little indeed satisfies them), they would, I am sure, take proper measures to encourage the cultivators. By the adoption of this plan, cotton of an uniform good quality may readily be obtained from every part of the N. W. Provinces, through the native cotton merchants, without the risk of incurring balances. If the half of the amount of cotton which is now used in England was thus transferred to India, it would not only do the country an immense deal of good, but yield the Government an export duty of about Rs. 55,00,000.

I have, &c.
(signed) J. G. Bruce, Deputy Collector.

Cawnpore, Collector's Office,
15 March 1848.

Countersigned by
(signed) R. Montgomery, Collector.

(True copy.)
(signed) C. Allen,
Offg. Secy. to the Govt. of the N. W. P.

(No. 42, in No. 1500 of 1849.)—(No. 76 of 1848.)

From *C. W. Kinloch*, Esq., Collector of Futtehpore, to *R. Lowther*, Esq., Commissioner of Revenue, Fourth Division, Allahabad.

Sir,

WITH reference to the correspondence noted in the margin,* I have now the honour to submit the information required by the Honourable the Court of Directors relative to the cultivation of cotton in this district. The beegah used in replying to the Court's queries is the settlement beegah, of which 2. 6. 4. are equivalent to an acre. The maund in use is the district maund, which contains 40 seers, each seer weighing 96 Co.'s rupees. The rupee used is the Company's rupee, commonly known as "cherah shahee."

Query 1. What is the price of cotton, freed from seed, at the principal mart or marts in your district?

The price varies considerably in some parts of the district. Five seers are sold for the rupee, whilst in others no more than three and a half seers are obtainable for the same price. The average price may be stated at one rupee for four seers two chittacks.

2. At what price does the Assamee sell his cotton, cleaned or uncleaned, and with and without advances?

The average price at which the Assamee sells his cleaned cotton is at the rate of four seers and two chittacks the rupee. The average rate at which uncleaned cotton is sold is 15 seers the rupee. When advances are made to the Assamees, which is not often the case, there is a trifling fall in the price demanded for the article, whether cleaned or uncleaned.

3. What is the expense of cleaning cotton by the churka, or foot roller, or by any other method which may be in use?

The only method of cleaning cotton in use in this district is by means of the common country churka. The charge ordinarily made is at the rate of one rupee for one maund of cotton. In some parts of the district payment is made in kind. In such cases a maund of grain is the usual remuneration for cleaning the same quantity of cotton.

4. What are the expenses of conveying cotton to the nearest port for shipment?

Cotton has never been an article of export from this district; the expense of conveying it to Calcutta, which is the nearest port for shipment, cannot be stated.

5. What is the average produce of cotton per beegah or acre?

The average produce of raw cotton per beegah is one maund eight seers seven chittacks, which gives three maunds 11 chittacks per acre.

6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried in the event of increased demand?

The quantity of land on which cotton was grown last year was 71,092 beegahs, 17 $\frac{1}{2}$ or 29,745 acres. It is probable, in the event of an increased demand for cotton, that about 20,000 beegahs more land would be brought under cultivation.

Futtehpore, Collector's Office,
21 June 1848.

I have, &c.
(signed) *C. W. Kinloch*, Collector.

(True copy.)
(signed) *C. Allen*,
Officiating Sec. to the Govt. of the N. W. P.

(No. 43, in No. 1500 of 1849.)—(No. 64 of 1848.)

From *J. J. W. Taunton*, Esq., Collector of Humeerpore, to *R. Lowther*, Esq., Commissioner, Fourth Division, Allahabad,

Sir,

I HAVE the honour to acknowledge the receipt of your circulars, Nos. 8 and 9, dated respectively the 28th February and 6th March, with enclosures, requesting information as to the extent to which India might be capable of supplying cotton in the event of an increased demand.

2d. In

* Commissioner's Circular, No. 9, dated 6 March 1848; Commissioner's Letter, No. 50, dated 20 April 1848; Commissioner's Letter, No. 53, dated 24 April 1848.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 75

2d. In reply, I beg leave to remark, that this part of the country already produces large quantities of cotton, and the amount might be materially increased if the demand for a further supply continued steady, and the price remunerative. From the accompanying papers you will observe, that in the portion of this district under my own immediate charge, there are near 80,000 beegahs at present under cultivation, and upwards of 200,000 more capable of producing cotton, a large portion of which would in all probability be used for that purpose, provided there was a greater demand for it.

3d. Replies received from the different teehseeldars to the queries framed by the Honourable the Court of Directors are herewith submitted.

Humeerpore, Collector's Office,
22 April 1848.

I have, &c.
(signed) J. J. W. Taunton, Collector.

I.
Bengal and
North Western
Provinces.

PERGUNNAH HUMEERPORE.

1. What is the price of cotton freed from seed at the principal mart or marts in your district?

Cotton is sold at Rs. 6. to 8. per maund of 40 seers, and 96 Company's rupees to the seer; the payment is made in Company's rupees.

2. At what price does the ryot sell his cotton, cleaned or uncleaned, and with or without advances?

The ryots who receive an advance sell their cotton from Rs. 1. 4. to Rs. 1. 8. per maund less than the bazaar rate.

3. What is the expense of cleaning cotton by the churka or foot-roller, or by any other method which may be in use?

One Company's rupee per maund for cleaning cotton by churka.

4. What are the expenses of conveying cotton to the nearest port for shipment?

Nine annas and six pie (including eight annas per maund for rowannah), for conveying cotton to Mirzapore.

5. What is the average produce of cotton per beegah or acre?

In a good season 35 seers of cotton per beegah.

6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried in the event of an increased demand?

9,557 beegahs of cotton under cultivation; a further extent of 8,000 beegahs could be brought under cultivation.

(signed) J. J. W. Taunton, Collector.

PERGUNNAH SOOMEIRPOOR.

1. What is the price of cotton freed from seed at the principal mart or marts in your district?

Cotton is sold at eight rupees per maund of 40 seers, and 90 Company's rupees to the seer; the payment is made in Company's rupees.

2. At what price does the ryot sell his cotton, cleaned or uncleaned, and with or without advances?

The ryots on receiving advance sell their cotton from Rs. 7. 10. to Rs. 7. 14. per maund, and those that take no advances at the bazaar rate. The uncleaned cotton is sold with advance at Rs. 1. 10. to Rs. 1. 14. per maund, and without advance at two rupees per maund.

3. What is the expense of cleaning cotton by the churka or foot-roller, or by any other method which may be in use?

One Company's rupee per maund for cleaning cotton by churka.

I.
Bengal and
North Western
Provinces.

4. What are the expenses of conveying cotton to the nearest port for shipment?
One rupee per maund (including a duty of eight annas) for conveying cotton to Mirzapore.

5. What is the average produce of cotton per beegah or acre?
Fifteen seers of cotton in a beegah.

6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried, in the event of an increased demand?

The land under cultivation with cotton is 16,300 beegahs. A further extent of 10,000 beegahs could be brought under cultivation.

(signed) J. J. W. Taunton, Collector.

PERGUNNAH MONDHA.

1. What is the price of cotton freed from seed at the principal mart or marts in your district?

Cotton is sold at *Sree*. Rs. 8. 10. per maund of 40 seers, and 90 Company's rupees per seer; the batta on Sreenuggur rupees is 6 to 10 per cent. for Company's rupees.

2. At what price does the ryot sell his cotton, cleaned or uncleaned, and with or without advances?

The ryots sell their cotton with advance at Rs. 7. 8. to Rs. 7. 12. per maund, and those that take no advance at the bazaar rate, the payments are made in Sreenuggur rupees. The ryots receive no advance for kuppas or uncleaned cotton on this pergunnah.

3. What is the expense of cleaning cotton by the churka or foot-roller, or by any other method which may be in use?

One Company's rupee per maund for cleaning cotton by churka.

4. What are the expenses of conveying cotton to the nearest port for shipment?

Rs. 1. 2. 5. per maund, duty included, for conveying cotton to Mirzapore.

5. What is the average produce of cotton per beegah or acre?

Ten to 25 seers of cotton per beegah.

6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried, in the event of an increased demand?

The land under cultivation with cotton is 25,000 beegahs. A further extent of 165,466 beegahs 13 biswahs could be brought under cultivation.

(signed) J. J. W. Taunton, Collector.

PERGUNNAH RATH.

1. What is the price of cotton, freed from seed, at the principal mart or marts in your district?

Cotton, according to quality, is sold at Rs. 6. 8. to Rs. 8. 4. per maund of 40 seers, and 101 Kuldar rupees to the seer; the payments are made in Sreenugger rupees; the batta on the latter is 6 to 10 rupees per cent. for Company's rupee.

2. At what price does the ryot sell his cotton, cleaned or uncleaned, and with or without advances?

The ryots who receive an advance sell their cleaned cotton, the first sort, at Rs. 7. 5. to Rs. 7. 12. per maund; second sort, from Rs. 6. 4. to Rs. 7. 4. per maund; and the third sort, from Rs. 5. 4. to Rs. 6. per maund. Those who take no advance, sell their cotton at the market price, and their kuppas from Rs. 2. 1. to Rs. 2. 10. per maund. Those that take advances

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 77

advances sell their uncleaned cotton, first sort, from *Rs. 2.* to *Rs. 2. 4.* per maund; second sort, *Rs. 1. 12.* to *Rs. 1. 14.* per maund; third sort, at *Rs. 1. 8.* per maund.

I.
Bengal and
North Western
Provinces.

3. What is the expense of cleaning cotton by the churka or foot-roller, or by any other method which may be in use?

Twelve annas to *Rs. 1. 4.* per maund, for cleaning cotton by churka.

4. What are the expenses of conveying cotton to the nearest port for shipment?

From seven annas and six pie to eight annas and eight pie (inclusive of rowannah) for conveying cotton, per maund, to Mirzapore.

5. What is the average produce of cotton per beegah or acre?

From 11 seers to one maund of cotton per beegah.

6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried in the event of an increased demand?

The land under cultivation with cotton is 17,279 beegahs. A further extent of 3,769 beegahs could be brought under cultivation if required.

(signed) *J. J. W. Taunton*, Collector.

PERGUNNAH PUNWAREE.

1. What is the price of cotton, freed from seed, at the principal mart or marts in your district?

Cotton is sold at *Rs. 7. 8.* to *Rs. 8.* Sreenuggur rupees per maund of 40 seers, of 126 Sreenuggur rupees to the seer. The uncleaned cotton is sold at two Company's rupees to *Rs. 2. 4.* per maund. The batta on Sreenuggur rupees is 6 to 10 per cent. for Company's rupees.

2. At what price does the ryot sell his cotton, cleaned or uncleaned, and with or without advances?

The ryots sell their cotton with advance at *Rs. 5. 14.* to *Rs. 7. 8.* per maund; and those that take no advance at the market rate, the payments are made in Sreenuggur rupees. The ryots, on receiving advance, sell their uncleaned cotton at *Rs. 1. 12.* to *Rs. 2. 4.* per maund.

3. What is the expense of cleaning cotton by the churka or foot-roller, or by any other method which may be in use?

Twelve annas to one rupee per maund for cleaning cotton by churka.

4. What are the expenses of conveying cotton to the nearest port for shipment?

Rs. 1. 12. 7., duty included, per maund, for conveying cotton from Punwaree to Mirzapore.

5. What is the average produce of cotton per beegah or acre?

Ten seers to one maund, and five seers of cotton per beegah.

6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried, in the event of an increased demand?

The land under cultivation with cotton is 19,784 beegahs and $9\frac{1}{2}$ biswahs. A further extent of 22,737 beegahs $8\frac{1}{4}$ biswahs could be brought under cultivation.

(signed) *J. J. W. Taunton*, Collector.

(True copy.)

(signed) *C. Allen*,
Officiating Secy. to the Govt. N. W. P.

I.
Bengal and
North Western
Provinces.

(No. 44, in No. 1500 of 1849.)—(No. 50 of 1848.)

From *F. B. Pearson*, Esq., Deputy-collector, Calpee, to *R. Lowther*, Esq., Commissioner,
Fourth Division, Allahabad.

Sir,

I HAVE the honour to acknowledge the receipt of your circulars, No. 8, dated 28th February, and No. 9, dated 6th March last, with their enclosures, regarding the cultivation of cotton, and to furnish, as desired, concise replies to the queries proposed by the Honourable the Court of Directors.

2d. The towns of Calpee and Koonch are the principal and only considerable marts in my district. The weight of the seer used in the Calpee cotton market is equal to that of *Co.'s Rs.* 96.; the seer of the Koonch cotton market is equal to *Co.'s Rs.* 101. 9. 7/5. in weight. A maund, therefore, bought at Koonch would be sold in Calpee as one maund three seers and a quarter, but that frauds in weighing, and loss on the road, reduce the difference, in point of fact, to two seers or one seer and a half. The value of this excess, however, is sufficient to balance the expense incurred by merchants in conveying the maund from Koonch to Calpee. A clear profit of about two annas per maund is generally looked for by the traders, and this is the average measure of the difference in the real price of the maund in the one and the other market. The nominal price is affected by the rate of discount on the Balasay rupee, which in Koonch is the medium of general barter, and is the basis of cotton accounts, both in Koonch and Calpee, though in the latter town during the last two years an uniform rate of five per cent. discount exclusively on the price of cotton has been established by the agreement of the merchants, while in the former the price of cotton continues to be affected, like that of other articles of traffic, by the varying value of the Balasay rupee in the money market. The average price of cotton per maund at Koonch, during the season now ending, has been *Rs.* 8. 14. of the Balasay currency, or *Co.'s Rs.* 8. 11., and at Calpee *Rs.* 9. 4. Balasay, or *Co.'s Rs.* 8. 13, according to the best calculation that I have been able to make. In the margin*, by way of illustrating the variations in the price of cotton, as determined by the fluctuating relations of demand and supply, and the extent to which the nominal price is affected by the vicissitudes of the Balasay currency, I have set down the average price current of cotton per maund in the Calpee market, reckoned in Balasay and Kaldar rupees in each of the last nine years, during which period the highest price has been so high as Balasay rupees 17. 4., and the lowest so low as Balasay rupees 7 per maund, and the Balasay rupee has been discounted at 27 per cent. and has borne a trifling premium.

3d. More than two-thirds and less than three-fourths of a maund of uncleaned cotton is seed; a ryot, therefore, selling a maund of uncleaned cotton will obtain for it more than a fourth, and less than a third of the market price of cleaned cotton; if he sells his cotton cleaned he will get the market price for it. It is more usual for the ryots to sell their cotton uncleaned, probably in order to satisfy the zemindar's demand for land-rent without delay, or because their other labours in the field leave them no time for cleaning it, and there may be no hands in their homes which can be applied to that work. The better class of cultivators who are able to clean it at home, sell it cleaned, and gain the value of the seed in addition to that of the cotton. The ryots are not in the habit of receiving advances from the cotton merchants, though they sometimes make bargains with them before their crops are ready.

4th. There is no other method of cleaning cotton in vogue in these parts beside the churka; one rupee is the wages paid for extracting a maund of clean cotton from kupas in the towns; the expense is doubtless not so much in the villages; where the cost of the churka is less, and where service is remunerated with grain instead of a money payment, and domestic labour is brought into play. But the expense in the towns only equals three-fourths of the value of the seed, which sells at the rate of a maund and a half per rupee, giving a profit to the purchaser of uncleaned cotton, independent of the market price of cleaned cotton.

5th. I now

* Average Price Current of Cotton per Maund in the Calpee Market.

Y. E. A. R.	Mean Price per Maund, Balasay.			Mean Rate of Discount.			Price in Company's Rupees.		
	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.
1839-40	13	13	-	11	13	6	12	5	7
1840-41	15	3	-	14	3	8	13	4	6
1841-42	12	8	-	14	6	6	10	14	10
1842-43	11	4	-	8	11	6	10	5	1
1843-44	10	-	-	8	9	-	9	3	5
1844-45	10	10	-	6	3	7	10	-	-
1845-46	10	3	-	3	11	6	9	13	2
1846-47	8	13	-	5	-	-	8	8	2
1847-48	9	4	-	5	-	-	8	13	-

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 79

5th. I now proceed to detail the expenses per maund of conveying cotton from Koonch to the bank of the river Jumna, at Calpee, from Calpee to Mirzapore, and thence to Calcutta.

1. From Koonch to Calpee.		2. From Calpee to Mirzapore.		3. From Mirzapore to Calcutta.	
	<i>Rs. a. p.</i>		<i>Rs. a. p.</i>		<i>Rs. a. p.</i>
Brokerage - - -	- - 3	Brokerage - - -	- - 3	Boat-hire and churundar -	- 7 6
Weighing - - -	- - 3	Weighing and coolie hire -	- - 3	Insurance - - -	- 4 6
Coolie-hire - - -	- - 1	Packing and thread -	- - 3	Insurance peon - - -	- - 9
Packing and thread -	- - 3	Porterage to Ghat - - -	- - 3	Pilotage, &c. - - -	- 1 -
Peons and gomashta -	- 1 -	Agency commission -	- - 9	Agency commission -	- - 9
Hoondeeana - - -	- 1 3	Boat-hire and churundar -	- 4 -	Hoondeeana - - -	- 5 6
Cart-hire - - -	- 3 -	Government duty and fee of Durkhab Nuvees.	- 9 9		
Churundar and Chowkeedar	- - 6	Hoondeeana - - -	- 1 6		
		Insurance and peon -	- 1 9		
		Gomashta and peon -	- 1 6		
	<i>Rs. - 6 7</i>		<i>Rs. 1 4 3</i>		<i>Rs. 1 4 -</i>

It will be observed that all the expenses here specified may not in all instances be incurred, and if the cotton were despatched straight to Calcutta, instead of first stopping at Calpee and then at Mirzapore, the repetition of sundry items would be avoided. In point of fact, however, none of the merchants (with the exception of Messrs. Hamilton, Higginson & Co.) send cotton direct to Calcutta. Perhaps I should mention that the cost of the cloth in which it is packed is included in the market price of cotton.

6th. The beegah of this district measures 45, and contains 2,025 square yards; two beegahs and six biswas are reckoned to a statute acre. The average produce of kupas per beegah is Government maunds 2. 8., which would give a return of 25 seers of cleaned cotton per beegah, or Government maund 1. 18. per statute acre.

7th. An area of *Bgs.* 48,413. 18. was sown with cotton this year (1255, *Ƒ. s.*), and the tehseeldars report that *Bgs.* 23,977. 13. more would be available for the cultivation of the plant. As, however, no kind of land is unsuitable for the purpose, except such as is low or exposed to inundation, there can be little doubt that if an increased demand should raise the price of the article, a much greater extent of land might be devoted to its production.

Calpee,
Deputy-Collectorship,
9 June 1848.

I have, &c.
(signed) *F. B. Pearson,*
Deputy-Collector.

(True copy.)
(signed) *C. Allen,*
Officiating Secretary to the Government N. W. P.

(No. 45, in No. 1500 of 1849.)

CALPEE.

Question.—What is the price of cotton freed from seed, at the principal mart or marts in your district?

Answer.—Kalpee and Koonch are the principal marts. In the former, cotton is sold at 8/13, and in the latter at 8/11 per maund.

At what price does the ryot sell his cotton, cleaned or uncleaned, and with or without advances?

Cleaned cotton is sold at the market price above stated, and uncleaned about one-third of the price of cleaned cotton.

The ryots do not receive advances from the cotton merchants, though they sometimes make bargains with them before their crops are ready.

What is the expense of cleaning cotton by the churka or foot-roller, or by any other method which may be in use?

Churkas are the only machines in use in this district. The expense for extracting a maund of clean cotton is one rupee in the towns; and in the villages labour is remunerated with grain instead of money.

What are the expenses of conveying cotton to the nearest port for shipment?

From Koonch to Calpee at 6 annas 7 pie per maund; from Calpee to Mirzapore at *Co.'s Rs.* 1. 4. 3. per maund.

From Mirzapore to Calcutta, at *Co.'s Rs.* 1. 4. per maund.

I.
Bengal and
North Western
Provinces.

What is the average produce of cotton per beegah or acre?

The average produce of kuppas per beegah is 2 maunds 8 seers, and of cleaned cotton 25 seers.

What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried on, in the event of an increased demand.

An area of 48,413 beegahs 18 biswas was sown with cotton in 1847-48. The cultivation might be extended to as much more, if the price of the article should be raised by increased demand.

N.B. The weight of the seer in the Calpee cotton market is *Co.'s Rs.* 96, and in that of Koonch is *Co.'s Rs.* 101. 9. 7 $\frac{1}{2}$.; 40 seers of either is equal to a maund. The prices of cotton referred to in the answers are computed in the Company's currency.

The beegah is equal to 2,025 square yards; 2 beegahs 6 biswahs are equal to a statute acre.

(True copy.)

(signed) C. Allen,
Officiating Secretary to the Government N. W. P.

(No. 46, in No. 1500 of 1849.)—(No. 376 of 1848.)

From *M. P. Edgeworth*, Esq., Officiating Collector of Banda, to *R. Lowther*, Esq.,
Commissioner of Revenue for the Fourth Division, Allahabad.

Sir,

WITH reference to Circular No. 9, dated 6th March last, regarding cotton cultivation, I have the honour to submit a statement showing the average price of cotton and produce per acre, as estimated, and the cost of carriage from this district to the great mart of Mirzapore. I have no means of ascertaining the cost thereon to Calcutta.

2d. It does not appear to be the practice to sell the uncleaned cotton, but the cost of cleaning is estimated at 12 annas the maund. It is done by the common churka of the villagers.

3d. With regard to the sixth query, I believe that all the land in the district, except that which is periodically overflowed, and constitutes but a very small portion, is capable of growing cotton; and that about one-third of that might be actually cultivated in any given year, the other two-thirds lying fallow, or undergoing the usual rotation of crops.

4th. The estimates of quantity produced per acre are very vague, as also the amount under cotton cultivation, which is not even perfect for the year of measurement, as the tables of cultivation were not drawn out in the Settlement Office for all the pergunnahs.

5th. It is very customary to sow the cotton along with sun (*Hibiscus Cannabinus*) and arhur (*Cojanus vicular*); the former is cut before the cotton comes, or the latter succeeds it; sometimes even Indian corn and joar are mixed; the plant is very carefully weeded and hoed at first, but the collection of the cotton is most slovenly; it is often allowed to fall on the ground, and is always more or less mixed with the withered leaves and other dirt.

6th. I beg to refer you to Mr. Rose's report on this subject, dated 8th April 1846; a much more accurate account of the quantity of cotton produced in the district could be obtained from the Customs department, as very little, if any, leaves the district by any route but that of the Jumna to Mirzapore.

I have, &c.
(signed) *M. P. Edgeworth*,
Officiating Collector.

Zillah Banda,
20th June 1848.

(True copy.)

(signed) C. Allen,
Officiating Secretary to the Government N. W. P.

(No. 47, in No. 1500 of 1849.)

STATEMENT showing the Average Price of Cotton and Produce per acre, and the Cost of Carriage from the District of *Banda to Mirzapore.*

1849-50 Sess. 2.

PERGUNNAH.	Price per Maund of 3,200 Tolas, from the Zemindars, of Cleaned Cotton.						Quantity Produced in each Acre.	Charges of Conveyance per Maund of 320 Tolas				Quantity of Land in which Cotton is cultivated,	
	When Purchases were made by Government.			At Present.				From Mart to Ghats.		From Ghats to Mirzapore.		According to Settlement Records.	According to Tehseeldar's Statement.
	Maximum.	Medium.	Minimum.	Maximum.	Medium.	Minimum.						A. R. P.	A. R. P.
	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Mds. b. c.</i>			<i>Rs. a. p.</i>			
Banda	12	11	10	7	6 8	6	1 1 2	To Chilla Ghat	2	Chilla	4		
Pylance				9 8	8 12	8	1 4 0			Googoollee	6		9,845 0 0
Simownee				7	5 8	5	0 11 4	To Chilla or Ongasee	9 1/2	Ongasee	3	26,572 0 0	
Ongasee				7 8	6	5 4	0 13 12	To Ongasee Ghat	1			23,100 0 0	
Dursenda				6	5	4	1 0 0	Rajapore is the mart for these three pergunnahs				33,974 0 0	43,733 0 0
Cheeboo	20	17	14	8	7 8	7	0 20 0			Rajapore	2	22,608 0 0	
Tirohun				8	7 12	7 8	2 10 0					20,707 0 0	11,472 0 0
Duduusa		15		8	7	6	0 30 0	To Rajapore	0 2 0				30,000 0 0
Seonda		13		9	8	7	2 0 8	From Bisenda to Banda	2 6			22,023 0 0	7,802 0 0
								" Bisenda to Rajapore	3 6				
								" Nurysee to Rajapore	5				

Zillah Bandah,
20 June 1848.

(signed) *M. P. Edgeworth,*
Officiating Collector.

(True copy.)
(signed) C. Allen,
Officiating Secretary to Government, N. W. P.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 81

Bengal or
North West
Provinces

I.
Bengal and
North Western
Provinces.

(No. 48, in No. 1500 of 1849.)—(No. 374 of 1848.)

From *E. T. Tyler, Esq.*, Officiating Collector of Allahabad, to *R. Lowther, Esq.*,
Commissioner, Allahabad Division.

Sir,

Revenue.
28 February 1848.
6 March 1848.
9 June 1848.

IN acknowledging your circulars, Nos. 8, 9, and 21, of dates as noted in the margin, upon the subject of the growth of cotton, and the extent to which this district might be capable of supplying that staple in the event of an increased demand for it, I have the honour, agreeable to the orders of the Court of Directors, conveyed in Mr. Secretary Bushby's letter, No. 75, dated 15th January last, to Mr. Secretary Thornton's address, which accompanied your circular, No. 9, above noted, to make the following report:—

1st. There are no great marts for cotton in this district.

2d. The growth of cotton is comparatively small.

3d. The produce of this district is, it may be said, not exported; if so, it is in amount insignificant, and can hardly be said to be an exportation.

2d. In reply to the six queries put by the Honourable Court, I have had a statement drawn up which embraces all the points under review.

3dly. You are aware that this district may be said to be in three divisions—1st Doab; 2d. Gungapar; 3d. Jumnapar; of the three divisions the soil of the latter is far better adapted for the growth of cotton; however, from the reports of the local officers the cultivation is only extended on the appearances of the favourableness of the season, and the amount of produce also appears very changeable and uncertain, and that the crops, some seasons, are hardly worth picking.

4th. There are two kinds of cotton produced in this district, viz., Rudea or Dasee cotton and Munwa; the former is cultivated with less trouble and difficulty, but the latter is the better quality and gives a larger produce; however, the expense of labour and attention to its growth is nearly one-third greater.

5th. There are only five merchants in Allahabad (*vide margin**) who trade in cotton; but it seems not above 500 maunds have been purchased of this district's growth for exportation, † but that the greatest quantity comes from Bundelcund and Agra provinces, also Western Provinces.

6th. The freights of this staple cannot be given hence to Calcutta, for it seems parties merely send the goods as far as Mirzapore or Ghazeepore, and the rate is seven rupees per 100 maunds to the former place, and 14 rupees per 100 maunds to the latter, whilst the insurance, during the rains, is at Rs. 1. 4. per 100 rupees, and 12 annas per 100 rupees during the hot and cold weather.

7th. The weights are as follows:—

1 punsaree equals 535 rupees;

8 punsarees „ 1 maund, or 4,280 rupees, or
equal to 107 lbs. English.

Allahabad Collectorship,
5 July 1848.

I have, &c.
(signed) *E. F. Tyler,*
Officiating Collector.

(True copy.)

(signed) C. Allen,
Officiating Secretary to the Government, N. W. P.

* Koowur Sen, Bunseedhur, Hurbelass, Ram Rutton, Sekhram and Sookhun Mull.

(No. 49, in No. 1500 of 1849.)

PERGUNNAHWAR.

STATEMENT of the Extent of CULTIVATION and Probable Amount of Produce of COTTON, with Prices per Maund, for Zillah Allahabad.

—	Tehseeldar.	Pergunnah.	Price of Cotton, Cleaned and Uncleaned, according to the Market Rates.		Price of Cleaned and Uncleaned Cotton, at the rate sold by Ryots.		Charges in taking out Cotton Seed.		Hire of Conveyance to Ghaut.		Amount Produce per Beegah.		Quantity of Land at present Cultivated by Cotton.	Quantity of Land fit for the Cultivation of Cotton.	Number of Beegahs per Acre.	How many Seers to the Maund, and how many Rupees to the Seer.	Rupees in Cur- rency.	
			Name of Mart.	Price of Uncleaned Cotton per Maund.	Price of Cleaned Cotton per Maund.	Price of Uncleaned Cotton per Maund.	Price of Cleaned Cotton per Maund.	By Churka or Wheel.	By other Pro- cess.	Name of nearest Ghaut.	Amount Hire.	Highest Produce.						Lowest Produce.
			Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.			Beeg. Bis.	Beeg. Bis.	Beeg. B. D.	Seers Rs.		
Joab -	Chail	Chail	Sajai Aukul -	10 - -	- - -	- - -	- - -	8 - -	- - -	- - -	- - -	3 maunds	30 seers	401 10	1,000 0	1 15 9	40 100	Com- pany's rupees.
			Husseea -	10 8 -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
			Khaupah -	11 - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Ditto	Kurra	Kurra	Munjunpore -	11 8 -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
			Kurraee -	11 12 -	3 10 -	11 8 -	1 - -	- - -	- - -	Raneepoor -	2 - -	1 20 0	0 20 0	1,636 0	2,045 0	- - -	- - -	- - -
			Uthurbun -	- - -	- - -	- - -	- - -	- - -	- - -	Jumna Ghat	- - -	1 35 0	0 25 0	1,462 0	2,077 10	1 15 9	40 100	ditto.
				- - -	- - -	- - -	- - -	- - -	- - -	Kankurabad	- 1 8	1 35 0	0 25 0	2,750 0	3,137 10	- - -	- - -	- - -
				- - -	- - -	- - -	- - -	- - -	- - -	Ganges Ghat	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
On the right bank of the Jumna.	Arail	Arail	Kurma -	11 4 -	3 14 -	11 2 -	1 2 -	- - -	- - -	- - -	9 - -	4 0 0	1 0 0	10,000 0	29,000 0	1 15 9	40 100	ditto.
Ditto	Barra	Barra	Barra -	10 10 -	3 12 -	10 8 -	1 - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
				10 - -	3 8 -	10 - -	14 - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Ditto	Khyraghur	Khyraghur	Sirsa -	11 4 -	- - -	10 - -	1 - -	- - -	- - -	Bullooa Ghat	- 8 -	1 8 0	0 16 0	6,000 0	5,714 0	1 15 0	40 100	ditto.
				- - -	- - -	- - -	- - -	- - -	- - -	on the Jumna	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
				2 10 8	8 - -	2 10 -	8 - -	1 - -	- - -	Sirsa -	- - 5	3 & 5 mds.	35 & 30 srs.	26,540 0	8,500 0	1 15 9	40 100	ditto.
				2 8 -	7 12 -	2 8 -	7 12 -	14 - -	- - -	Gauges Ghat	- - 6	- - -	- - -	- - -	- - -	- - -	- - -	- - -
				2 6 -	- - -	2 6 -	- - -	- - -	- - -		- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
On the left bank of the Ganges.	Secundra	Secundra	Phoolpoor -	4 8 -	10 - -	4 8 -	10 - -	- - -	- - -	Grain is given for the labour.	- - -	5 0 0	16 seers	100 0	1,000 0	1 15 9	40 100	ditto.
Ditto	Jhoosee	Bulmapore and Jhooree.		3 - -	10 - -	3 - -	10 - -	- - -	- - -	Jhoosee Gan- ges Ghat.	- - -	3 0 0	6 & 8 seers	200 0	500 0	1 15 9	40 100	ditto.
Ditto	Rewaree	Rowaree		- - -	- - -	- - -	- - -	- - -	- - -		- - -	- - -	- - -	- - -	- - -	- - -	- - -	ditto.
Ditto	Moh			- - -	- - -	- - -	- - -	- - -	- - -		- - -	- - -	- - -	- - -	- - -	- - -	- - -	ditto.
Ditto	Sooram	Sooram	Ismael -	9 13 -	11 6 -	- - -	- - -	1 - -	- - -		- 1 -	- - -	- - -	- - -	- - -	- - -	- - -	ditto.
Ditto	Khas	Nowab Gunge	Cotghee -	- - -	12 8 -	- - -	- - -	- - -	- - -		- - -	- - -	- - -	- - -	- - -	- - -	- - -	ditto.
Ditto	Mirzapore Chow- hara.	Doorga Gunge		4 - -	10 - -	- - -	- - -	- - -	- - -		- - -	- - -	- - -	- - -	- - -	- - -	- - -	ditto.
				- - -	- - -	- - -	- - -	- - -	- - -		- - -	- - -	- - -	Beeg Bis 49,089 10	Beeg. 52,974 0	- - -	- - -	- - -
				- - -	- - -	- - -	- - -	- - -	- - -		- - -	- - -	- - -	or 27,689 acres	or 29,881 acres	- - -	- - -	- - -

REMARKS.—From the Returns, it seems that 49,089 beegahs, or 27,689 acres, were last year in cultivation, and 29,881 acres more could be brought into cultivation; thus 57,570 acres, which on an average year would give above a lac of maunds of cotton. This, however, would hardly supply the demands of the district itself. In the five last pergunnahs no cotton is grown at all, as the soil is bad for the production of this staple.

Allahabad Collectorship,
5 July 1848.

(signed) E. F. Tyler,
Offg. Collector.

(True copy.)
(signed) C. Allen,
Officiating Secretary to Government, N. W. P.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA.

84 PAPERS RELATING TO MEASURES TAKEN SINCE 1847

I.
Bengal and
North Western
Provinces.

(No. 50, in No. 1500 of 1849.)—(No. 235 of 1848.)

From *E. A. Reade, Esq.*, Commissioner of the Benares Division, to Sudder Board of Revenue, North Western Provinces, Agra.

Gentlemen,

In reply to your secretary's docket, No. 51, dated 18th February last, with its enclosures, I have the honour to submit the replies from the collectors in this division (as noted in the margin*) to the queries of the Honourable the Court of Directors, regarding the present state and facilities of extending the cotton cultivation in India.

2d. In this division the cultivation of cotton is little more than nominal. It is most commonly mixed up with other crops; it is nowhere carefully tended; in many places it is an object of superstitious aversion, and often where the plant contrives to struggle to maturity, it is left, after being stripped of a portion of the bolls enough to supply present domestic purposes, to be devoured by cattle.

3d. As a preliminary, to endeavour to give a summary of the replies of the local officers to the queries of the Honourable Court, it is necessary to record the average weights and measures of land in each district.

DISTRICT.		Beegah Square Yards.	Mauud in lbs. Avoirdupois.
Goruckpore	West	3,136	98
	East	3,840	
Azimghur		3,136	84
Jounpore		ditto	98
Mirzapore		ditto	82 $\frac{1}{2}$
Benares		ditto	82 $\frac{1}{2}$
Ghazee pore		ditto	82 $\frac{1}{2}$

4th. The average in the margin † is the price of cotton cleaned from seed in the principal markets of each district. I should add, that it is founded partly on the collector's returns, and partly on other sources of information.

5th. Where retail of home produce is uncertain and accidental, the difficulty of estimating the price at which the cultivator sells his cotton cleaned or uncleaned is apparent. Probably *Rs. 2. 14.* uncleaned, and *11.* rupees for cleaned cotton per mauud of 84 lbs. avoirdupois is pretty correct.

6th. The expense of cleaning by the chuika, which is pretty nearly the same implement throughout the division, and the labourer at which is ordinarily paid in grain, may be estimated at *Rs. 1. 1.* per mauud of the same standard.

7th. Cotton is only exported for shipment from Mirzapore, which is the great emporium of cotton on the Ganges; the collector reports that the cost, including insurance and all charges, is *Rs. 1. 4.* per mauud, and his information is doubtless correct.

8th. In estimating the average produce of cotton per beegah, or acre, it must be borne in mind that the produce of the better sort is 50 per cent. less than that of the inferior kind in a beegah of 3,136 square yards. The estimated produce of the former is 80 lbs., and 150 of the latter, two-thirds of the former and four-fifths of the latter being seed.

9th. The estimate of the quantity of land occupied by cotton cultivation, owing, as above described, to intermixture with other crops, or to its being laid along the skirts of fields,

* Goruckpore, 29th May 1848, No. 174, and Enclosure; Azimghur, 3d July 1848, No. 262; Jounpore, 13th July 1848, No. 306; Mirzapore, 6th June 1848, No. 121; Benares, 18th July 1848, No. 221; Ghazee pore, 30th June 1848, No. 239.

DISTRICT.	Average Price.		Mauud in lbs. Avoirdupois.
	R.	As.	
Goruckpore	12	8	98
Azimghur	10	8	84
Jounpore	10	8	98
Mirzapore	8	14	84
Benares	10	8	84
Ghazee pore	11	—	84

fields, must unavoidably rest upon conjecture. In Benares the area, after careful inquiry, is estimated at about 2,000 acres, and probably this is about the extent of cultivation in each of the districts of Azimgarh, Jounpore, Mirzapore, and Ghazee-pore. But in Goruckpore, I estimate the area not to be less than 15,000 acres, and the result of these calculations assigns 25,000 acres to the whole division.

Beng
North
Prov
—

10th. It will be seen that in all the districts of this division the collectors are clearly of opinion that their districts are as to cotton non-productive, and never will be otherwise. The district soils are not considered suited to its growth with any hope of success, and enhancement of price therefore in the market would not induce the villager to substitute it for any other object of agricultural labour. I have no doubt that this opinion is correct, except as regards the district of Goruckpore.

11th. The collector assumes that there is no indigenous cotton in that district, and reasons that if the district were adapted to cotton there would have been a larger cultivation, considering the distance from the great marts and the difficulties of transit. He has, however, submitted the report of Mr. Cooke, a practical agriculturist, resident on the western side of his district, who, it may be observed, has had experience also in Bundelcund. I request attention to the paper he has drawn up on the subject, and to which I have added other papers on the same matter, some of which I have reason to believe, especially the report of Mr. Blount, the American planter, on specimens of indigenous cotton in the Goruckpore district, have never been submitted to the Board.

12th. Mr. Blount's experimental cultivation in 1843 and 1844 was a failure, but it should be borne in mind that he almost entirely confined his experiment to American cotton and American process of agriculture. His operations, too, were restricted to a single spot, a piece of available Government land. Making some allowance for professional bias, I am still of opinion that the proposition contained in paragraph 8 of his report, No. 63, dated 1st October 1844, to introduce the ryotwar system of cultivation, giving advances and securing repayment of them in produce, as is now done with our poppy cultivation, is far better adapted to secure extension of cultivation and improvement in the crop produced than experimental farms, limited to a particular spot in a district 130 miles by 80.

13th. The collector has not the leisure and does not reside in or near the localities suited to cotton cultivation. In central Goruckpore, and there, alas! the experiment was attempted, there is no indigenous cotton. Mr. Blount's report of samples reiers, it will be seen, to the eastern and western pergunnahs of the district. But there are deputy opium agents located east and west of Goruckpore, whose agency, stimulated by a premium or excess of produce, of superior quality, would soon satisfactorily determine whether the district is or is not adapted to the growth of cotton of a quality which will compete with similar produce of other countries in the market. We have these facts before us, that 30 years ago, poppy cultivation in this district was considered a dubious speculation, and that not only do Government now gain nearly 30 lakhs of rupees by present operations, but all classes of the people, even Brahmins, have put their hands to it, and that only 12 years ago, the sugar-cane was limited to one portion of the district; that the project of extension upon the equalization of the duties on imported sugar, at first received with jeers by mercantile men, and superstitious objections by native agriculturists, has, despite of subsequent temporary over speculation and its evils, resulted in marvellous success, dissipating the heavy anxiety of financial pressure from a rapid increase of assessment to the extent of 15 lakhs of rupees, contemporaneous with a diminished expenditure on the part of Government.

14th. With these facts, and the statements of practical men annexed to this letter, the opinion I have ventured to express in the last paragraph of the accompanying memorandum, dated 24th January 1843, remains unchanged.

Commissioner's Office, Fifth Division,
Benares, 16 August 1848.

I have, &c.
(signed) E. A. Reade,
Commissioner.

(True copy.)
(signed) C. Allen,
Officiating Secretary to the Government N. W. P.

(No. 51, in No. 1500 of 1849.)—(No. 174 of 1848.)

From H. C. Tucker, Esq., Collector of Goruckpore, to E. A. Reade, Esq., Commissioner,
Fifth Division, Benares.

Sir,

With reference to your letter of the 6th March last, No. 17, and annexure, I have the honour to submit the following replies to the queries of the Honourable Court of Directors.

1. The average price at the principal marts is from 12 rupees to 13 rupees per maund of 24 gundahs to the seer, equal to 60 avoirdupois pounds.

290—Sess. 2.

L 3

2. The

I:
Bengal and
North Western
Provinces.

2. The ryots occasionally plant a little kupas with Rubur maize, &c. &c. The produce is very small, about one-fifth of cotton to four-fifths seed. The Brahmins make their strings with the cotton, and cattle are fed with the seeds. None is ever sold, the small quantity produced being required for domestic use. In Perowna some cotton is grown and sold at about 18 seers of 24 gundahs (27 avoirdupois pounds) uncleaned, and two or three seers more; with advances cleaned, it sells at about $3\frac{1}{2}$ seers ($5\frac{1}{2}$ pounds) per rupee.

3. What little is cleaned is either cleaned by hand or churka by the ryots themselves. If by a hired labourer, he gets either the seed or two seers of grain, or four pice for his trouble. About $1\frac{1}{2}$ pounds of cotton can be cleaned in the course of a day.

4. No export.

5. In Perowna $2\frac{1}{2}$ maunds (150 pounds) are the average produce of statute acre. About one-fifth is cotton and four-fifths seed.

6. About 1,300 acres are under cotton in Perowna; thousands of acres might be cultivated, were there a sufficient demand, and a sure market not dependent upon European and American fluctuations.

7. The amount of imported cotton is about 3,627,000 pounds. About 60,000 pounds are re-exported to Nipal, also some cloth and twist.

I have also the honour to transmit copy of a memo. by Mr. Cooke, one of the most practical agriculturists in the district. He would like to superintend another cotton experiment, but it would not appear advisable for Government to engage in another such attempt, where cotton is not produced naturally. Had the district been adapted for cotton, there would have been a larger cultivation of it, considering our great distance from the great marts, and the number of rivers and other difficulties which the cotton has to encounter on its way to us.

Goruckpore Collector's Office,
29 May 1848.

I have, &c.
(signed) H. C. Tucker, Collector.

(True copy.)
(signed) C. Allen,
Officiating Secretary to the Government, N. W. P.

(No. 52, in No. 1500 of 1849.)

From *W. Cooke, Esq.*, to *Henry Carre Tucker, Esq.*, Collector of Goruckpore.

Sir,

I HAVE received your letter, No. 107, dated 11th March 1848, requesting replies to several questions regarding the growth and sale of cotton in the district, and of its agricultural prospects; I beg to send such replies to these questions as I am able to give, imperfect as they are.

Bustee, Goruckpore, 13 March 1848.

I remain, &c.
(signed) *W. Cooke.*

Question 1. What is the price of cotton, freed from seed, at the principal mart or marts in your district?

Answer. The principal marts in the district of Goruckpore for cotton freed from seed are Mehndowl Gai Ghat, Bilwa Bazar, Doobowlia, Gopalpore, Burhul, Piprowl, and others, of which perhaps the largest import market is Mehndowl. At present the price is about 12 rupees per maund of 25 gundahs to the seer for good cotton wool, which is about 20 per cent. better than Calcutta Bazar weight; the price, however, varies according to quality and the seasons of the year; when the season has been unusually wet the price rises a little, if it remains moderately dry the price falls somewhat; heavy rains destroy the cotton in the pod on the plant. Cotton wool, however, is bartered by retail dealers more frequently in exchange for cotton twist or thread from the common chuika. If the cotton twist be of moderately fine manufacture, the cotton dealer by retail gives two seers of cotton wool for one seer of twist or thread. If the twist is of coarse and thick manufacture, then for one seer of thread $1\frac{1}{2}$ seers of cotton wool are exchanged.

2. At what price does the ryot sell his cotton, cleaned or uncleaned, and with or without advances?

Kuppas, *i. e.*, cotton with the seed not separated, sells in the growing districts, such as Bundlekund, &c., for R. 2. 12. to three rupees per maund, averaging nearly 25 per cent. better than Calcutta Bazar weight; if advances are made to the ryot, then perhaps six to eight annas per maund less than such prices are given.

3d. What

3. What is the expense of cleaning cotton by the chuika or foot-roller, or by any other method which may be in use?

The native small churka, or otherwise called ootunee, is used by one or two people according to the make of the instrument; if worked by two people, six puseres, or 30 seers of kuppas, or cotton with seed, is cleaned per diem, of which, when the seed is extracted, remains 10 seers of cleaned cotton wool and 20 seers of seed or benowla. The wages of the two people working this instrument is paid for, not by money, but in grain, equalling in quantity the clean cotton wool separated from the seed. Thus two people will get ten seers of grain and barley mixed, which, selling at one maund or one maund five seers per rupee in the cotton districts, give as wages, say four annas, or two annas each man or woman employed, which, on each seer of cleaned cotton, is about two pice per seer, or about 4½ pice English computation. However, the cotton seed, or benowla, is very valuable as food for plough cattle, and sells for 1½ maunds per rupee in the districts where it grows.

I.
Bengal and
North Western
Provinces.

4. What are the expenses of conveying cotton to the market of most note on the boundary of the district?

Cotton wool is imported into Goruckpore district principally from Bundlekund, and the expense of conveying thence to this district stands about £. 2. 8. to three rupees per maund, every charge included. Cotton in Bundlekund may be had from seven to eight rupees per maund.

5. What is the average produce of cotton per beegah or acre?

In Bundlekund the average produce of cotton with the seed is about eight maunds per beegah, or about 10 or 11 maunds per acre; cotton wool separated from the seed will therefore be one-third that quantity.

6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried in the event of an increased demand?

In Goruckpore there is but a very trifling portion of land sown with cotton; but I hazard an opinion that it might be made to compete comparatively with other districts, notwithstanding the failure of the experiment made by the American planter. All that is required is encouragement and a ready market for the ryots to take their produce to for sale, where they may meet with no disappointment; ryots in general in a district like Goruckpore are not speculative, and will not risk a cultivation of anything for the chance of a market; but I do believe if encouragement were held out to them in a similar manner as is practised in the cultivation and produce of poppy by Government, there would be no want of cotton grown in the Goruckpore district, nor could one easily mention the limit to its production, which would rise or fall with the demand.

7. What is the average wholesale price of imported cotton?

The average price on wholesale of imported cotton in the Goruckpore district, at present is about 12 rupees per maund, by retail about 3½ seers per rupee.

8. What is the estimated annual consumption of imported cotton?

I would say that about 75,000 maunds of imported cotton is consumed in the district of Goruckpore. 7,350,000 lbs. a

Remarks.—In the cotton districts, cotton is sometimes sown in fields slightly intermixed with Indian corn, oordee, and urhur. In Goruckpore and other eastern districts which I have myself seen, this is likewise practised; yet whole fields unmixed with any other crop may be seen growing cotton alone; cotton is principally grown on high elevated soils, free from all deposit of rain water. I am informed by cotton dealers that cotton wool now selling at 12 rupees per maund used formerly, 15 years ago, to sell for from 22 rupees to 25 rupees per maund.

This fall in price may account for the reduction of cultivation and production in British India. The import of cotton twist of English manufacture has much effect likewise in the economy of the gherusht or ryot, whose wife and female relatives formerly used to make all the twist cotton intended for family consumption for wearing apparel. The farmer grew his own cotton, his family spun it, and they used to be clad by the article grown by them; now they get a finer article from England ready made to their hands at perhaps as cheap a price. Much English cotton twist is imported from Calcutta into Goruckpore and makes its way into Oudh, where it is worked up by thousands of johlahs or weavers by the hand, woven into cloth at Tandeh and other places, once famous for Indian fabrics. At the prices mentioned for cotton wool, ruling in the growing districts, no great profit, if any profit at all, will fall to the lot of any merchant transporting it to Calcutta, when the excessive costs of such transit are considered, and the risks by fire and water, besides the uncertainty of markets, ruled by English prices current, dependant so much on the supplies from America, which perhaps exports the article into England at a smaller price than the Indian grower and exporter can afford to do.

There are two kinds of cotton grown in India, the kuppas and surma or munooa; the former has a strong thick fibre, the latter fine and soft; the former is a stouter plant and produces more per beegah; the surma or munooa does not yield nearly so much. Over production checks in time, by fall in prices, all articles of commerce; and there can be no doubt

I.
Bengal and
North Western
Provinces.

doubt that cotton wool from India has suffered from this alone. America has competed successfully against British India, and its cotton wool found more favour in the European markets than that of India latterly; yet it is an understood matter in India, among the natives, that cloth wove with twist manufactured in England, generally of American produce, is not so lasting as that which is spun and wove from cotton wool produced in India. The capital which used formerly to come into India in exchange for its cotton wools, has been absorbed latterly entirely by America; by this India has been an extreme loser. While British India has been burdened with a transit duty, and an export duty on its produce of cotton, besides is burdened with a tax on the land producing such cotton, America is perhaps free from all such burdens, and can therefore afford to sell her cotton wools for a less price than British India can; the competition is unequal.

(signed) *W. Cooke.*

(True copy.)
(signed) *N. Willard,*
Deputy Collector.

(True copy.)
(signed) *C. Allen,*
Officiating Secretary to Government, N. W. P.

(No. 53, in No. 1500 of 1849.)—(No. 262 of 1848.)

From *J. Muir, Esq.,* Collector of Azimghur, to *E. A. Reade, Esq.,* Commissioner,
Fifth Division, Benares.

Sir,

In reply to your circulars, No. 17 of 6th March and No. 32 of 17th ultimo, I have the honour to state, that it appears from the reports of the tehseeldars, that scarcely any cotton is produced in this district, the little that is grown being sown among other crops, such as Urhur, and the scanty produce being used by the cultivator for domestic consumption. Questions 2, 3, 4, of the Honourable Court cannot be answered. The reply to the 5th is, that from several quarters the produce is described as scanty and indifferent, and the soil is considered by the people of Nizamabad unsuited to this crop. In reply to the 6th question, I suppose it may be gathered from what is stated above, that no increase in the cultivation can reasonably be looked for. In reply to the 1st question, the price of imported cotton, where the tehseeldars give it, is as per margin*. In Muhal the cotton imported is said to be bartered for thread.

Azimghur Collectorship,
3 July 1848.

I have, &c.
(signed) *J. Muir,*
Collector.

(True copy.)
(signed) *C. Allen,*
Officiating Secretary to the Government, N. W. P.

(No. 54, in No. 1500 of 1849.)—(No. 306 of 1848.)

From *M. C. Ommanney, Esq.,* Collector of Jounpore, to *E. A. Reade, Esq.,* Commissioner,
Fifth Division, Benares.

Sir,

I HAVE the honour to acknowledge the receipt of your circular, No. 17, dated 6th March last, forwarding a memorandum in the revenue department, No. 14, from the Honourable Court of Directors.

2d. Having received all the returns from the tehseeldars, I subjoin replies to the questions seriatim.

1. Price of cleaned cotton on an average appears to be 11 rupees for the best, and 10 rupees per maund, the next description of cotton wool.

2. Cotton is not a staple or product of the district; "Munooa" is grown and sown mixed with urhur, but the produce is poor, and is sown for individual and local consumption, not for remuneration or profit.

3. The

* Azimghur, 1st quality, Rs. 10 per maund, of 80 seers weight, 84 lbs. avoirdupois.
2d ditto - Rs. 9. 8. - - - ditto - - - ditto.
Ghasce - - - - - Rs. 8. 15. 3. - - ditto - - - ditto as above.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 89

I.
Bengal and
North Western
Provinces.

3. The reply is involved in the foregoing.

4. Ditto. There is no export; cotton is brought and sold at Jounpore, and at Shahgunj for local consumption at the former place; the expenditure is represented as about 15,800 maunds, at the latter 30,000; the seer being 96 Company's rupees. This cotton is supplied chiefly from Bundlecund. A small inconsiderable quantity finds its way from Mirzapore direct to Rampore, a small mart on the Mirzapore road.

Jounpore Collectorship,
13 July 1848.

I have, &c.
(signed) M. C. Ommanney,
Collector.

(True copy.)
(signed) C. Allen,
Officiating Secretary to the Government, N. W. P.

(No. 55 in No. 1509 of 1849).—(No. 121 of 1848.)

From W. E. Money, Esq., Collector of Mirzapore, to E. A. Reade, Esq., Commissioner of Revenue, Fifth Division, Benares.

Sir,

I HAVE the honour to acknowledge the receipt of your circular letter, No. 17, dated 6th March last, annexing copy of a despatch from the Honourable the Court of Directors, dated 10th November 1847, on the subject of cotton produce.

2. In reply, I beg to state that no cotton is grown in this district for export; some of the ryots sow small quantities, intermixed with other grain (urhur, &c.), for their own consumption. By far the greater portion, however, is supplied from the town at very low rates. I am informed that about 12 or 15 years ago, when cotton was in greater demand, a few hundred beegahs used to be sown towards the Rewah frontiers, and the western parts of the district; but since the fall in the price of cotton the cultivation has been given up, owing to the labour and expense attending it, requiring it to be weeded three times, and the produce per beegah is generally small and uncertain.

3. Mirzapore is well known to be the largest cotton market on this side of India; large quantities are received annually from Oomrawuttee, Nagpore, Bundlecund, Agra, Furruckabad, and other places, and are usually despatched from hence to Ghazee-pore, Patna, Moorshedabad, and Calcutta. The Deccan trade, however, has been on the decline for the last three years, as will be seen from the imports noted in the margin.* This information has been obtained from the Customs' office. There is at present a stock of nearly four lacs of maunds in the bazar, a larger quantity than there has been for many years, and more is daily arriving; the demand is languid, and the price is very low, and falling; the best Banda could be landed in Calcutta, cleaned and picked for shipment, in half-screwed bales, at Co's. Rs. 7. 12. to 10 rupees. Ten years ago such cotton would have sold for Co's. Rs. 16. The abolition of the export duties led people to expect a fair demand, but the state of things in China has stopped shipment, and the cotton trade of this side of India is but a wreck of what it was, and unless some change takes place cotton will cease to be an export. The internal consumption in this district is small as there are no manufactoryes.

* YEAR.	Cotton.
	Maunds.
1845-46 - -	3,51,810
1846-47 - -	2,56,754
1847-48 - -	1,80,906

4. In conclusion, I beg to subjoin brief replies to the queries put by the Honourable the Court of Directors.

1st. What is the price of cotton, freed from seed, at the principal mart or marts in your district?

Mirzapore is the principal mart, and the wholesale price of cotton, after deducting commission, exchange and brokerage, is as follows:

	Per Maund of 80 Sicca Weight
	Rs. a. p.
WESTERN COTTON:	
Agra - - - - -	7 12 -
Bundlecund - - - - -	8 - -
Furruckabad - - - - -	7 14 -
SOUTHERN COTTON:	
Nagpore - - - - -	8 14 -
Oomrawuttee - - - - -	8 10 -
Saugor - - - - -	7 - -

2d. At what price does the ryot sell his cotton, cleaned or uncleaned, and with or without advances?

The ryots do not sell; the produce being small, they appropriate it to their own use.

3d. What is the expense of cleaning cotton by the churka or foot roller, or by any other method which may be in use?

The churkee is used for cleaning cotton by the cultivators themselves.

4th. What are the expenses of conveying cotton to the nearest port for shipment?

The expense of conveying cotton in country boats to Calcutta, including insurance and other charges, averages about R. 1. 4. per maund.

5th. What is the average produce of cotton per beegah, or acre?

Supposed to be two to two-and-a-half maunds (kupas or cotton with seed) per acre; the produce entirely depends upon the rain and the care bestowed upon its culture.

6th. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried, in the event of an increased demand?

There are no lands specially set apart for cotton cultivation in this district.

Mirzapore Collectorship,
6 June 1848.

I have, &c.
(signed) *W. E. Money*,
Collector.

(True copy.)

(signed) *C. Allen*,
Officiating Secretary to the Government, N. W. P.

(No. 56 in No. 1500 of 1849.)—(No. 221 of 1848.)

From *D. F. M'Leod*, Esq. Collector of Benares, to *E. A. Reade*, Esq., Commissioner for the Benares Division.

Sir,

I HAVE the honour to acknowledge the receipt of your letters noted in the margin,* requiring replies to queries respecting the cultivation of cotton, conveyed by the Court of Directors in their revenue letter, No. 14, of the 10th November 1847, and proceed to furnish the information required, so far as I am able, or the circumstances of the district permit. The following are the standards adopted in the subjoined remarks:

1st. The Rupee.—The Company's rupee weighing a tola of 180 grains troy.

2d. The Maund.—The maund of 40 seers, each seer weighing 80 Co.'s Rs. or tolahs, 35 seers being thus equal to 72 lbs. avoirdupois.

3d. The Beegah.—The standard beegah of the North Western Provinces, measuring 3,025 square yards, or five-eighths of an English acre.

Query 1. What is the price of cotton, freed from seed, at the principal marts in your district?

Answer. There are no places in this district which can be regarded as cotton marts.

2. At what price does the ryot sell his cotton, cleaned or uncleaned, and with or without advance?

The selling rates of cotton freed from seed, however, at the principal markets of the interior, and in the city of Benares, average from about 3 $\frac{1}{2}$ seers to about four seers per rupee, or from 10 to 12 rupees per maund; some of the inferior kinds from Agra and the westward, however, sell as low as Rs. 7. 8. per maund.

3. What is the expense of cleaning cotton by the churka, or pot-roller, or by any other method which may be in use?

The simplest form of hand churka is the instrument universally employed in this district for cleaning cotton, and none other is known. These are made up at a cost of two or three annas each, and last even for years. As the operation is invariably performed by the household of the cultivator, it is difficult to say what is the expense of effecting it; about 2 $\frac{1}{2}$ seers, however, of cotton are cleaned in a day by one person, and should a churka have to be borrowed, it appears to be the usage to pay over to the owner some portion of the seed, varying from 1 $\frac{1}{2}$ seers to half of the seed separated during the day.

4. What are the expenses of conveying cotton to the nearest port for shipment?

The nearest large port to this is Mirzapore, the great entrepôt of the Deccan, and a large part of Upper India, and to this place cotton may be conveyed for about 10 rupees per 100 maunds; to Calcutta, which is properly "the nearest port for shipment," the cost for conveyance is about 50 rupees per hundred maunds.

5. What

* No. 17, letters, dated 6th March 1848; No. 22, circular, dated 17th April 1848; No. 32, circular, dated 17th April 1848.

5. What is the average value of cotton per beegah, or acre ?

The cotton grown in this district is chiefly of a description here named mannooa, which is sown on high, dry, and sandy soils, and mixed with other rainy season crops, such as bajrah, urhar, &c. If the latter from any cause prove an indifferent crop, the cotton generally grows vigorously ; but if, on the contrary, the former be luxuriant, the cotton plants become choked and unproductive. On an average, however, this description would appear to yield from 20 seers to a maund per beegah. Besides this, however, there is another description of cotton, named rahria, which is sown almost exclusively by koerees, and other classes who raise garden produce, and requires irrigation. This description appears to yield about double the quantity of the foregoing beegah.

6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried in the event of an increased demand ?
The quantity of land now cultivated with cotton is as follows:—

	MANNOOA.	RAHRIA.	TOTAL.
Pergunnahs on the north of the Ganges - - - -	2,760	75	2,835
Pergunnahs on south side of the Ganges - - - -	250	62	312
TOTAL - - - -	3,010	137	3,147

and the quantity of additional land which might be made available for the purpose, in the event of the demand being increased, is estimated by the tahseeldars at about 3,350 beegahs for the mannooa, and 430 for the rahria. This estimate, however, is not, in my opinion, worthy of any confidence, as if circumstances were to require it, there is little doubt that a large portion of the soil of the district might be made to bear cotton.

2. This, however, has no pretensions to being, nor is it likely ever to become a cotton-producing district, as while the soils of Central and Southern India, and of other parts, appear to produce it with all the vigour of indigenous crop, the plant is here always, as far as my observation has extended, a puny and sickly looking one, and the result, as shown by the very insignificant quantity produced, confirms this opinion ; so that I cannot suppose that any returns from this district can be of any but a negative use.

3. This indeed you have yourself indicated in your 5th para., which directs an inquiry as to the quantity and prices of cotton imported into and consumed in the district. The quantity introduced has been a somewhat difficult matter to ascertain, and the results elicited by my inquiries can be regarded but as a rough approximation.

4. The estimated produce of the district is about 2,900 maunds per annum, in addition to which it is calculated that 2,500 maunds are imported into the pergunnahs lying north of the Ganges ; 1,200 maunds and 1,800 maunds into the city of Benares ; making an aggregate of cotton imported of about 5,500 maunds ; which, added to the produce of the district itself, seeing that there is no export, gives, for the entire consumption of the district, about 8,400 maunds per annum ; and the population of the entire district having lately been ascertained to be 7,41,426 persons, this gives an average consumption of 7 ¼ chittacks per head.

Benares Collectorship,
18 July 1848.

I have, &c.
(signed) D. F. M^rLeod, Collector.

(True copy.
(signed) C. Allen,
Officiating Secretary to the Government, N. W. P.

(No. 57, in No. 1500 of 1849.)—(No. 239 of 1848.)

From P. C. Trench, Esq., Collector of Ghazeepee, to E. A. Reade, Esq., Commissioner of Revenue, Fifth Division, Bares.

Sir,
I HAVE the honour to reply to your circular letter, No.17, of the 6th March, transmitting copy of a despatch from the Honourable Court of Directors, No. 14, dated 10th November 1847, on the subject of cotton produce, and proceed to answer the questions put in the latter.

1st. What is the price of cotton, freed from seed, at the principal mart or marts in your district ?

Ghazeepee is the principal mart, and cleaned cotton sold wholesale, or by the bale of 1½ maunds, fetches according to quality 13 rupees per maund, 12 rupees per maund, Rs. 11. 8. per maund, Rs. 9. 8. per maund, being an average of Rs. 11. 8.

The retail price of 1st quality cleaned cotton is $3\frac{1}{2}$ seers for one rupee; 2d quality cleaned cotton is $3\frac{1}{2}$ seers for one rupee; 3d quality cleaned cotton is $3\frac{1}{2}$ seers for one rupee.

2d. At what price does the ryot sell his cotton, cleaned or uncleaned, and with or without advances?

This not being a district from which cotton grown in it is exported, the ryot has no cotton cleaned for sale, but of uncleaned cotton in such small sales as take place in the district, from 12 to 16 seers are sold for the rupee; cotton not being a staple produce of the district, people are not in the habit of giving advances for its cultivation.

3d. What is the expense of cleaning cotton by the churka or foot-roller, or by any other method which may be in use?

The mode of cleaning is by churka, two cylinders in juxta-revolution, by which process the seeds fall over on one side and the cleansed cotton is drawn through. This churka is worked by the hand, and generally by women; one hand can clean about eight seers in a day, for which the remuneration is one anna; if the payment be made in grain, two seers.

4th. What are the expenses of conveying cotton to the nearest port for shipment (or market of most note) in the boundary of this district?

There being no export the growers do not send cotton out of the district, but the cost of carriage would be for carting from twelve annas up to one rupee per diem for each cart, and conveyance by bullock from six annas to eight annas for each bullock per diem; either would go about 20 miles a day.

5th. What is the average produce of cotton per beegah, or acre?

No fields are given up entirely to cotton in this district, it is always cast in with some other crops; the cultivators in this district are for the most part koerees, and give themselves to the cultivation of the poppy as a more profitable crop than cotton.

6th. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried, in the event of an increased demand?

The climate and soil not being suitable, and cotton not being found a remunerating crop, there is, as before stated, no land exclusively given up to it, but there are 2,545 beegahs in the district in which cotton generally shares the soil with other crops. I find that the import of cotton for the last year into the district was 76,562 maunds.

Of this was sold.	-	-	-	-	-	-	67,562	"
Leaving	-	-	-	-	-	-	9,000	"
Of that sold there went to Bullea	-	-	-	-	-	-	12,600	"
"	"	Zumaneah	-	-	-	-	6,000	"
"	"	Russerah	-	-	-	-	1,500	"
"	"	Syedpoor	-	-	-	-	4,500	"
"	"	Bahadoorgunge	-	-	-	-	450	"
							25,050	

The remainder is sold either at Ghazeepore or in the neighbourhood, or exported towards Shahabad, Azimghur, Goruckpore, and the western country.

Ghazeepore Collectorship,
30 June 1848.

I have, &c.
(signed) P. C. Trench,
Collector.

Note.—The beegah, of which mention is made in my letter, contains 3,136 square yards. The maund is equal to $82\frac{1}{2}$ lbs. avoirdupois.

(signed) P. C. Trench,
Collector.

(True copy.)

(signed) C. Allen,
Officiating Secretary to the Government, N. W. P.

(No. 85, in No. 1500 of 1849.)

MEMORANDUM.—There are three descriptions of cotton grown in the district of Goruckpore:—

Koktee.—A species of nankeen is sown, after little previous tillage, in February, and is plucked in September and October following; it is an annual, but the people never renew its sowing in the same fields for two successive years. The cultivation of the koktee cotton is confined to Pergunnahs Shahjehanpoor and Sidhoa Jobuna, a tract of country of about 900 square miles.

If

Nurma.—If tended with care is triennial, and even quinquennial; its cultivation is generally in narrow strips round vegetable gardens, sugar-cane fields, and the like; it grows both in the baugur (silicious) and bâht (calcareous) soils, whereas koktee grows only in the latter. It is sown generally in June, and yields from October to April; it again renews leaf in June with the same result.

Dasee.—Is universal as to parts of the districts, but is usually grown in bangur soils; it is the cotton, as its name indicates, of the district; it is sown like urhur or grain in fields, with little previous culture, in June, and does not yield until the following April. It is an annual, blows only for a month or six weeks, and is then cut down.

Natives of intelligence consider that about one-sixth of the supply of this district is from home produce. The capabilities of the district for the growth of cotton are asserted and believed; but the general remark is, that care is only taken of it contemporaneously with the crops harvested in spring, after the cutting of which, the countless herds of cattle in this Hindoo-populated district, let loose upon the cornfields, destroy cotton plantations to such an extent as to render the speculation one of little profit and much risk.

Goruckpore is a district reclaiming itself from the waste, to which settlers from elsewhere are attracted by low rates of land and abundance of room. Hitherto the population have thought it essential to turn their first attention to the produce of grain; in the last seven years only they have been generally invited to the cultivation of sugar cane; no attempts have been made to improve their present careless mode of preparing the ground for cotton, nor to preserve effectually the plant, when raised, from depredation.

Mr. Blount's observations in person, during a residence of some days, and Mr. Finny's remarks explanatory of the soil and climate best suited for the successful experiment of cotton plantation, confirmed me in the opinion I have long held, that this district is worthy of being selected for the present experiment, in which so much interest is taken.

The humidity of the atmosphere, the absence of hot winds, the abundant and lasting dews, the rich vegetable mould, the undulating surface of the country, and the invariably plenteous supply of rain, enable me to anticipate success, the experiment in Bundelcund having as yet apparently, from the want of these natural peculiarities, been unsuccessful.

Mr. Blount is of opinion that it is inexpedient to commence upon forest land; I concur with him; it would involve great outlay; it would risk the health of the superintendent; it would take up much time.

Some years ago, by order of Government, all land which could be spared from the large areas of cantonments were directed to be marked off, and made available for revenue purposes; a plot of ground, 118 British acres in extent, was thus separated from the present cantonment, and farmed out at an assessment graduated from 75 to 101 per annum. I took the precaution of directing, at the revision of settlement, that if this land were ever required for Government purposes, the leaseholder should have no claim except to realise the crops actually standing, and that if he raised houses on the plot he should not be entitled to compensation.

This plot, near to Goruckpore, and two of the principal district thoroughfares, is now covered with fine crops, which will be cut in all March and April. Mr. Blount thinks well of the soil; a residence can be obtained for moderate terms in its vicinity, and it is the only eligible spot I know of in the neighbourhood.

The expense attending the experiment must be very much less than in Bundelcund, or indeed any other part of the country. In the present instance the amount of land revenue affected, should the experiment even prove a complete failure, will be 101 rupees for each year.

If the experiment succeed there are European and native speculators who will readily transfer the speculation to their grants; there is abundance of waste land; the district is intersected by numerous streams, several of which are navigable all the year round. The iron and copper of Nepal, and the choice timber of the inexhaustible Terai, are at hand, for the purposes of machinery and navigation.

Seven years ago natives in several parts of Goruckpore were averse to the cultivation of the sugar cane, from superstitious prejudices; and so short a time ago as January 1837, several Calcutta merchants believed my recommendations, of the eastern side of Goruckpore for sugar-cane speculation, were unsafe; there was not then in all Goruckpore 10,000 acres of sugar cane; and I estimate that there cannot be less now than 150,000 acres. Native superstition vanished at the sight of success; the sugar cane is cultivated with more care, too, as well as to far greater extent.

So with cotton, if once the speculation can indicate but a glimmering of success; if it can only be proved that it is worth the cultivator's while to cultivate, and fence in a field of cotton with care, it will become popular and extensive.

Goruckpore, 24 January 1843.

(signed) E. A. Reade, Collector.

(True copy.)

(signed) C. Allen,
Officiating Secretary to the Government, N. W. P.

94 PAPERS RELATING TO MEASURES TAKEN SINCE 1847

I.
Bengal and
North Western
Provinces.

(No. 59, in No. 1500 of 1849.)—(No. 6 of 1843.)

From *M. Blount*, Esq., Government Cotton Planter, Goruckpore, to *E. A. Reade*, Esq.,
Collector of Goruckpore.

Sir,

I have the honour to forward a report of the samples of cotton from various parts of this district, sent from your office for my examination. I had taken a list of the villages, pergunnahs, &c., from which each sample came, expecting that there would be considerable difference in their quality; but, on examination, I find them so much alike, that a difference is scarcely perceptible in their qualities, except in two or three samples, which will be mentioned below. The staple of all the different samples are strong and fine, and not below the medium of short staple cottons in length.

2. Samples, Nos. 1 to 11,* sent from Pergunnah Kootee Bhar, is a cotton I am not at all acquainted with. I suppose it was once a yellow cotton, such as nankeen cloth is manufactured of. It must have got its present miserable colour (for it is neither yellow, white, or blue, but a mixture of all of them, without partaking decidedly of either colour) by degenerating or bad culture. It is not deficient in length or strength of staple, but is an article I am persuaded would meet with no sale in a foreign market.

3. One sample marked "Nurma" † is a nankeen, and has a good yellow colour. (I suppose this cotton is misnamed, as I am of the impression that the nurma is a white cotton.) The samples from Mouzah Lookhia, Pergunnah Moonsoornugger Bustee; one from Mouzah Burhoulee; one from Mouzah Merhee, Pergunnah Moonsoornugger Bustee, I think, are superior in fineness and length of staple to the other samples. None of them, however, are inferior to the cotton of Bundlecund with which I am acquainted, and in one respect superior; that is, they have not that woolly, harsh fibre of Bundlecund cotton, and if properly cleaned and put up, no objection would be had to them in market.

4. There is one sample marked "Bharelow" cotton † that differs entirely from the other samples; it has double the quantity of wool on a seed, a fine soft fibre, but not quite so long or of as good colour as the few samples mentioned above.

Office of the Government Cotton Plantations,
Goruckpore, 1 May 1843.

I have, &c.
(signed) *M. Blount*,
Government Cotton Planter.

(True copy.)
(signed) *C. Allen*,
Officiating Secretary to the Government, N. W. P.

(No. 60 in No. 1500 of 1849.)

SAMPLE OF GORUCKPORE COTTON.

No.	VILLAGE.	TUPPAH.	PERGUNNAH.	American Seed sent from Jubbulpore to Bundlecund.
1	Sehereea - - -	Oojoy - - -	Aurungabad - -	<p>No. 4.</p> <p>Of the 10 samples of Pergunnah Aurungabad, there is not a seed difference; the colour and fibre of the cotton is good, and the staple is not shorter than Indian cottons in general. I have sewed on to the paper a small parcel of American cotton, ditto cotton from seed sent from Jubbulpore, a small sample of cotton common to the Pergunnah of Soomerpoor, so that you might be able to judge, by comparison, the cotton of this district. No. 4 is a fair sample of cotton sent from Pergunnah of Aurungabad.</p>
2	Majhuwar - - -	Benourpara - -	ditto - - -	
3	Dulputpoor - -	Oojoy - - -	ditto - - -	
4	Pudmanpoor - -	Munwar - - -	ditto - - -	
5	Rumooapoor - -	Oojoy - - -	ditto - - -	
6	Burdeha - - -	Birwar - - -	ditto - - -	
7	Bhet-Khaha - -	Muhoy - - -	ditto - - -	
8	Seyee - - -	Oojoy - - -	ditto - - -	
9	Lukmunpoor - -	Kulwaree - - -	ditto - - -	
10	Uchypoor - - -	ditto - - -	ditto - - -	
1	Bhuroulee - - -	Secunderpoor -	Moonsoornuggur Bustee.	<p>The three samples from Pergunnah Moonsoornuggur Bustee, is a cotton of fine, long fibre, rather weak, and good color; in length a little shorter of American, but quite equal to the Jubbulpore cotton.</p>
2	Sookbish - - -	ditto - - -	ditto - - -	
3	Merhee - - -	ditto - - -	ditto - - -	

* Kote Bhar in Pergunnahs Sidhoa Jobuna and Telpoor Koktee. I had, I confess, great hopes of this cotton; I still think it worthy of attention; cloth made of it sells 35 per cent. better than that from ordinary cotton.

† Particular care will be taken to secure the seed, and to give it the benefit of an improved culture and manipulation.

No.	VILLAGE.	TUPPAH.	PERGUNNAH.	American Seed sent from Jubbulpore to Bundelcund.
1	Puchowas - -	Secunderpoor -	Amorah - -	Four samples from Pergunnah Amorah are of the same quality of that sent from Aurungabad. No. 1 to 11, is a yellow cotton, fibre strong, moderate length.
2	Ram Ghur - -	Ramghur - -	ditto - -	
3	Soomdha - -	ditto - -	ditto - -	
4	Serowlee - -	Secunderpoor -	ditto - -	
1	Beehapoor - -	- - - -	Kotee Bhar, Pergunnah Tilpoor, and Sidhoe Jobuna.	One sample, marked Nurma, is a much better color than the yellow cotton, No. 1 to 11, from Pergunnah Amorah. Noted on package Nurma.
2	Sisowa - -	- - - -		
3	Moosa Chuppra -	- - - -		
4	Kurdimah - -	- - - -		
5	Rajwal - -	- - - -		
6	Gouree - -	- - - -		
7	Bhoojoulee - -	- - - -		
8	Aumdeeaba - -	- - - -		
9	Bhugowlee - -	- - - -		
10	Dhunoy - -	- - - -		
11	Captain Gunge -	- - - -		
1	Koosunohar - -	Soonkhery - -	Moochwlee - -	Samples 1 to 48, from Pergunnah Muhowlee, average the same as the samples from Pergunnah Aurungabad, except Nos. 6 and 8, which are nearly as quite to the three samples from Moonsooruggur Bustee.
2	Rampoor - -	ditto - -	ditto - -	
3	Murchah - -	ditto - -	ditto - -	
4	Seuhun - -	ditto - -	ditto - -	
5	Roomeepoor - -	ditto - -	ditto - -	
6	Bhurjha - -	ditto - -	ditto - -	
7	Nuggolee Khoord	Mayhanees - -	ditto - -	
8	Sooreniah - -	ditto - -	ditto - -	
9	Cakergarud - -	ditto - -	ditto - -	
10	Bhooadgaun - -	ditto - -	ditto - -	
11	Dickhla - -	ditto - -	ditto - -	
12	Nugoles Kullan -	ditto - -	ditto - -	
13	Murdwa - -	Hnrkhela - -	ditto - -	
14	Bechoaud - -	ditto - -	ditto - -	
15	Hurkhela - -	ditto - -	ditto - -	
16	Imlaha - -	ditto - -	ditto - -	
17	Ameriah - -	ditto - -	ditto - -	
18	Bhoonse Singpoor	ditto - -	ditto - -	
19	Putteeah - -	Toolasoo - -	ditto - -	
20	Bhumourah - -	ditto - -	ditto - -	
21	Muthnee - -	ditto - -	ditto - -	
22	Muckdoompoor -	ditto - -	ditto - -	
23	Punch Pookhoraees	ditto - -	ditto - -	
24	Mootee Kullan -	Toorooksuwar -	ditto - -	
25	Moorad Bhar - -	ditto - -	ditto - -	
26	Ranypoor - -	ditto - -	ditto - -	
27	Busseepoor - -	ditto - -	ditto - -	
28	Mootee Khoord -	ditto - -	ditto - -	
29	Pursuhur - -	Mooradpoor - -	Mhowlee - -	
30	Rutteeah - -	ditto - -	ditto - -	
31	Gahonawn - -	ditto - -	ditto - -	
32	Choorah - -	ditto - -	ditto - -	
33	Aungasee - -	ditto - -	ditto - -	
34	Beethair - -	ditto - -	ditto - -	
35	Puchrah - -	ditto - -	ditto - -	
36	Moodbaree - -	ditto - -	ditto - -	
37	Aurghat - -	ditto - -	ditto - -	
38	Nuggowa - -	ditto - -	ditto - -	
39	Mooradpoor - -	ditto - -	ditto - -	
40	Mujhowa Oorf Guneshpoor.	ditto - -	ditto - -	
41	Bhelow - -	Abeawn - -	ditto - -	
42	Buluhur - -	ditto - -	ditto - -	
43	Monney Moondbpoor	ditto - -	ditto - -	
44	Russoolpoor - -	ditto - -	ditto - -	
45	Puonee - -	ditto - -	ditto - -	
46	Ghudheeha - -	ditto - -	ditto - -	
47	Goordhut - -	Simra - -	ditto - -	
48	Goyghat - -	ditto - -	ditto - -	

PAPERS RELATING TO MEASURES TAKEN SINCE 1847

No.	VILLAGE.	TUPPAH.	PERGUNNAH.	American Seed sent from Jubbalpore to Bundelcund.
1	Somreda Nuddee	Ooterha Belee	Husunpoor Muglow	11 samples from the pergunnah are very dirty, though on pulling out staple, I find it of very fair length and colour. No. 1 is a fair sample of its quality. Nos. 4 and 8 are of long staple, but rather weak.
2	Dreta	ditto	ditto	
3	Dureeaun	ditto	ditto	
4	Gungasera	ditto	ditto	
5	Simrah	Kusbah	ditto	
6	Husnee	ditto	ditto	
7	Beearah	ditto	ditto	
8	Soowara	Oodhowlee	ditto	
9	Russoolpoor	Kusba	ditto	
10	Purasee	Hureehur	ditto	
11	Purasee	Koossairee	ditto	
1	Paharee	Suckra	Russoolpoor Ghose	Is of good length, but weak. Called Bhardum; the seed is thickly covered with wool staple, rather short, but strong.
1	Poreinah	Estar	Ruttunpoor Bansee	

(signed) A. M. Blount, Government Cotton Planter.

(True copy.)

(signed) C. Allen,
Officiating Secretary to the Government, N.W.P.

(No. 61, in No. 1500 of 1849.)—(No. 244 of 1844.)

From E. A. Reade, Esq., Collector of Goruckpore, to E. P. Smith, Esq., Commissioner, Fifth Division, Benares.

Sir,

WITH Mr. Blount's accounts for the past month noted in the margin,* I beg leave to submit that gentleman's report of date 1st instant.

2. You will participate with me in the disappointment, that neither in a good or bad season has the experiment of the cotton farm succeeded. Mr. Blount's report is faithful and accurate. It is due to him from me that I should observe, if industry and attention could have induced success, he would have succeeded. It will be observed that the experiment has been more variously tried than last year, but with the same result.

3. I think it therefore proved, that the experiment with foreign cotton, has been and will be a failure in this district, and I recommend that the proposition in the 6th para. of Mr. Blount's letter be sanctioned at once.

4. I believe the opinion, never relinquished by some, is gaining ground, that the indigenous cotton of India, properly cultivated, tended and ginned, is likely to be attended with more satisfactory results, than experiments of the nature which have been tried here and elsewhere.

5. It is a fact that there is no inconsiderable cultivation of cotton in this district, and that there are varieties of cotton. It is admitted that it would be more extensive but for the depredation of cattle; and we have the testimony of a practical man, that it is not the article, but the state in which it is brought into market, which gives it present ill repute. The experiment, too, it should be remembered, has been tried upon sandy soil, and in Pergunnah Munglee, where there is no indigenous cotton.

6. In 1821, 315 maunds of opium were realised by cultivation of the poppy; in 1841 the out-turn is nearly 5,000 maunds, and this result has been obtained, not by any increase of price paid for the drug, the rate being still the same, but by the simple mechanism of seasonable advances, and faithful adjustment. I think well of the proposition made in para. 8 of Mr. Blount's letter. No such intricate machinery or such varied precautions as the Benares agency comprises, is required in this case. Those who take advances from the Treasury will be able to give security for payment in produce, making good any deficiency which may arise, upon a calculation of value at average market rates, for the last five years. The experiment might be limited to 500 beegahs, and the establishment of supervision, besides Mr. Blount, might be maintained at trifling expense.

Goruckpore Collectorship,
10 October 1844.I have, &c.
(signed) E. A. Reade,
Collector.

(True copy.)

(signed) C. Allen,
Officiating Secretary to the Government, N. W. P.

* Mr. Blount's Salary Bill for September 1844; Contingent Bill, in duplicate, for September 1844; Detailed statements of establishment for September 1844; abstract of Diary of Coolies for September 1844; Cash Account for September 1844.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 97

(No. 62, in No. 1500 of 1849.)—(No. 63 of 1844.)

From *M. Blount, Esq.*, Government Cotton Planter, Goruckpore, to *E. A. Reade, Esq.*,
Collector of Goruckpore.

I.
Bengal and
North Western
Provinces.

Sir,

I HAVE delayed making a report on the Government experiment cotton farm under my charge at this station, for the reason, that at different stages of the cultivation in previous years, the appearance of the plants has always been so flattering as to induce me to report favourably of the prospect, when the result has been that my expectations have not been realised; I therefore thought it best to wait until I should be able to report definitely as to its success or failure for this season; and I now much regret to have again to report a total failure of the experiment at this farm.

2. This season has been quite different from that of 1843; that year there was rather a scarcity of rain, this season has been a very wet one; yet the result of both seasons' experiment have been the same, a failure. At the first setting in of the rains I had the old plants pruned, and they immediately threw out vigorous shoots, and judging from the quantity of flowers and young pods, promised to yield a most prolific crop; but as in the previous year's experiments, the fruit has dropped off before arriving at maturity; this has not only been the case with the American, but with every other description of cottons on this farm, with the exception of the *Nurma* and *Cooktee* cottons of this district, which I presume must require a peculiar situation or soil, for on the sandy soil of this farm it has not even blossomed.

3. The new plants of this season are very small, and as yet show no disposition to produce, particularly the American, which will yield nothing.

4. Five and a half beegahs of American and Jubbulpore cotton, which I planted on fresh lands at the grant of Mr. M'Cornish, has grown to a much larger plant than that on the farm at the station, but has been damaged so much by worms, that under the most favourable circumstances it can produce only a very scanty crop.

5. The Bourbon and American cotton planted in February, by irrigation, both have grown very large, but have not yet produced any flowers.

6. I beg to bring to your notice that the time of my engagement with Government will expire in April next, and that another trial of the experiment cannot be made before that time, and unless it is the intention of Government to pursue the experiment further, I would respectfully suggest that the servants under me on this establishment be discharged, except such* as are necessary for watching the farm, and the property belonging to the farm disposed of, by which a saving of six months' expenses will be made to Government.

* A peon and
chowkeedar.

7. The cultivation of the farm is completed, and there will be no work to perform but such as can be done by daily labourers.

8. Unfortunate as have been all the experiments under my superintendence, not having even met with partial success (only in one season, that of 1841, in Bundlekund), I am still of the opinion that the experiments will be attended in some other portion of the country with success. But to secure what I suppose one of the prime objects of Government, a more extensive and better cultivation of the cotton plant, it will be necessary to change the mode of conducting the experiments, from what it has heretofore been (nej cultivation) to a zemindaree or ryotwar system, by giving advances to the natives for cultivating, with an agreement on their part to pursue the system of cultivation pointed out by the planter, and also secure to Government a repayment of the advances either in produce or money. By pursuing such a system the ryot becomes interested, and it at once secures a more extended cultivation of the plant that can ever be accomplished by a single planter under the nej system. The planter might still, as heretofore, have a small model farm, but of not more than 40 or 50 beegahs; this would give land enough for the trial of every description of foreign and indigenous cotton, and would allow the planter time for superintending and instructing the ryots in the American mode of cultivation.

9. The establishment of machinery for cleaning the cotton raised by the natives, would I am persuaded go very far towards improving the character of the native cotton. The native cotton is not such a very inferior article (particularly those of the district of Jubbulpore and the country on the head waters of the *T-tee* and *Nerbu da* rivers), but it is in the dirty state in which it is brought into market, being both trashy and dirty, which diminishes its price.

Office of the Government Cotton Plantations,
Goruckpore, 1 October 1844.

I have
(signed) *M. Blount*,
Government Cotton Planter.

(True copy.)

(signed) C. Allen,
Officiating Secretary to the Government, N. W. P.

DIVISION.	DISTRICT.	Query 1st.	Query 2d.				Query 3d.	Query 4th.	Query 5th.		Query 6th.		Query 7th.
		Price of Cotton, Freed from Seed, at the Principal Marts in the District? Per Maund.	Price at which the Ryot Sells his Cotton, Cleaned or Uncleaned, and With or Without Advances? Per Maund				Expense of Cleaning Cotton by the Churkee? Per Maund.	Expense of Conveying Cotton to the nearest Port for Shipment? Per Maund.	Average Produce of Cotton? Per Acre.		Quantity of Land under Cultivation with Cotton and Extent to which it is probable Cultivation could be carried in the event of an Increased Demand?		The Maund, Seer, Rupee, and Beegah, used in these Calculations?
			With Advances.		Without Advances.				Cleaned.	Uncleaned.	Under Cultivation.	Probable Extent of Cultivation.	
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Ms. s. c.	Ms. s. c.	Acres.	Acres.		
Delhie	Bhuttee	-	-	-	-	None grown.	-	-	-	-	-	-	Maund, 40 seers. Seer - 80 C.'s Rs. Beegah, 3,025 Rupee - Co.'s.
	Paneeput	5 15 8	5 4 7	1 14 -	5 13 11	1 14 9	- 6 -	-	-	8 34 2	14,820	16,703	
	Hissar	6 13 -	-	1 10 7	6 5 4	2 1 11	- 8 -	2 2 -	-	5 35 3	9,271	11,271	
	Delhie	6 2 5	-	-	6 1 6	2 - -	- 8 -	2 12 -	1 3 1	-	3,321	6,642	
	Rohtuck	6 8 5	5 8 -	-	5 14 -	-	- 7 -	2 7 -	2 32 0	-	14,552	18,750	
	Goorgaon	5 15 3	5 8 -	1 13 2	5 13 1	1 15 5	1 2 11	2 13 3	1 23 0	4 39 5	29,617	35,418	
		6 4 6½	5 6 10	1 12 7	5 15 11½	2 - -	- 9 7	3 5 9	1 19 6	6 22 14	71,581	88,784	
Meerut	Dehra Dhoon	-	-	-	-	None grown.	-	-	-	-	-	-	Maund, 40 seers. Seer - 80 C.'s Rs. Seers. Tolas. 40 - 92 Co.'s Rs. 40 - 80 " 40 - 80 " 40 - 80 "
	Suharunpore	7 7 -	7 5 -	2 3 8½	7 5 9½	2 6 2½	- 12 -	6 - -	-	5 35 10½	30,637	39,426	
	Moozuffernuggur	5 4 -	-	1 13 7½	7 4 4	2 1 8	- 10 6	-	-	5 4 1	15,601	17,601	
	Meerut	6 5 6	-	-	6 3 5	1 13 5	- 9 9	-	-	3 6 4	23,046	29,731	
	Boolundshuhur	6 6 4½	5 5 4	1 10 6	5 14 9½	-	1 - -	- 13 10½	2 33 0	-	14,505	14,505	
	Allyghur	6 15 1½	6 6 9	1 14 4	6 12 9	2 2 11	- 7 -	3 2 -	1 4 2	3 13 7	69,050	69,050	
		6 7 7½	6 5 8	1 15 -	6 11 5	2 1 7½	- 11 -	3 5 3½	1 38 9	4 14 13½	1,52,839	1,70,313	
Kumaon	Kumaon Proper	12 4 11	-	-	-	-	-	-	-	-	260	260	
	Gurhwal	-	-	-	-	None grown.	-	-	-	-	-	-	
		12 4 11	-	-	-	-	-	-	-	-	260	260	
Rohilcund	Bijnour	7 4 5½	-	-	6 10 8	-	1 9 2½	1 12 9½	2 1 0	-	19,039	19,039	40 - 80 Co.'s Rs.
	Moradabad	10 8 -	-	-	7 8 -	2 8 -	1 - -	- 15 1½	2 16 0	-	50,000	1,00,000	40 - 100 "
	Budaon	8 - -	-	-	8 - -	2 - -	- 12 10	- 10 10	-	4 15 -	34,091	79,489	40 - 80 "
	Bareilly	10 - -	-	-	10 - -	2 8 -	- 10 -	- - -	1 12 8	4 15 -	29,711	29,711	40 { Furruckabad and Bareilly, Chullan.
	Shahjehanpore	10 13 9	-	-	-	2 8 6	- Seed -	- - -	- 21 4	2 4 8	7,160	11,733	40 - 80 Co.'s
			9 5 3	-	-	8 - 8	2 6 1	- 15 6	1 2 3	1 22 11	3 24 13	1,40,001.	2,39,972

296—Sess. 2.	Agra	Multra	{ 7 2 8 } 6 3 5	-	-	6 13 -	2 4 2	1 - -	{ 1 - - } - 4 - to Agra	2 8 0	-	1,03,042	2,53,759	40 - 80 Co.'s. Rs.		
		Agra	7 6 2	6 10 8	-	7 6 2	-	1 - -	{ - 8 0 } to Mirzapore 1 4 0 to Calcutta	1 15 0	-	87,000	1,20,000	40 - 80 "		
		Furruckabad	{ 13 - - } 12 - - 11 - -	-	-	-	-	Something less than a moderate price.	- 8 -	{ 2 - - } - 8 4	2 0 0	-	14,148	21,156	40 - 96 "	
		Mynpoory	{ 7 14 - } 8 6 -	-	-	7 2 -	-	- 8 -	1 9 4	-	9 16 7	29,290	49,290	40 - 80 "		
		Etawah	8 12 6 1/2	8 8 -	2 12 10	8 12 6 1/2	2 15 10 1/2	1 2 -	1 - 6	1 11 12	3 2 4	49,676	60,676	40, 102 "		
		Deduct 20 p'ct. throughout; difference of weight.														
		Deduct 27 1/2 p'ct. throughout; difference of weight.														
					9 2 1	7 9 4	2 12 10	7 8 5	2 10 -	- 14 -	1 - 5	1 26 3	6 9 11	2,83,156	5,04,881	
		N 2	Allahabad	Cawnpore	{ 9 - - } 10 - -	-	2 - -	-	2 8 -	1 - -	1 - -	2 0 0	6 0 0	1,01,111	202,222	40 - 97 Co.'s. Rs.
				Futtehpore	9 11 -	-	A small allowance -	9 11 -	2 10 8	1 - -	-	-	3 11 0	29,745	39,454	40 - 96 "
Deduct 20 p'ct. throughout; difference of weight.																
Humeerpore	8 - -			7 8 -	1 14 8	8 - -	2 - -	1 - -	2 4 -	0 33 9	-	66,841	2,23,017	40 - 96 "		
Deduct 20 p'ct. throughout; difference of weight.																
Banda	7 - -			-	-	7 - -	-	- 12 -	1 8 -	1 1 3	-	1,02,852	1,02,852	40 - 80 "		
Benares	Allahabad	10 8 -	-	-	10 - -	3 5 -	1 - -	-	1 25 9	-	27,689	57,570	40, 100 "			
		Deduct 32 p'ct. throughout; difference of weight.														
		Calpee	8 12 -	-	-	8 12 -	2 14 8	1 - -	2 14 10	1 17 8	5 4 6	21,049	42,098	40 - 96 "		
		Deduct 20 p'ct. throughout; difference of weight.														
					9 - -	7 8 -	1 15 -	8 11 -	2 11 -	1 - -	1 15 -	1 15 9	4 31 13	3,49,287	6,67,213	
Benares	Goruckpore	12 8 -	-	2 - -	-	2 6 -	Seed	-	-	0 20 0	2 20 0	1,300	10,300	40		
		Azimghur	10 - -	-	-	-	-	-	-	-	-	-	-	-	40 - 80	
		Jounpore	10 8 -	-	-	-	-	-	-	-	-	-	-	-	40 - "	
		Mirzapore	8 14 -	-	-	-	-	-	1 4 -	-	2 10 0	-	-	-	40 - "	
		Benares	10 8 -	-	-	-	-	-	- 8 -	-	1 8 0	1,967	6,290	40 - 80		
		Ghazeepore	11 8 -	-	-	-	2 13 -	- 5 -	-	-	-	1,649	1,649	40 - 80		
					10 10 4	-	2 - -	-	2 9 -	- 5 -	1 6 -	0 20 0	3 29 0	4,916	18,239	
											10,02,040	16,89,662				

Sudder Board of Revenue, N. W. P., Agra, }
27 February 1849.

(True copy.)
(signed) C. Allen,
Officiating Secretary to the Government, N. W. P.

(signed) W. Muir, Secretary.

I.
Bengal and
North Western
Provinces.

Home Department, Revenue.—No. 7 of 1851.

To the Honourable the Court of Directors of the East India Company.

Honourable Sirs,

IN continuation of our letter, No. 6, of 1849, dated the 19th May, we have the honour to transmit the accompanying despatches from the Governor-general's agent in Bundelcund and for the affairs of Scindia's dominions, having reference to your inquiry as to the extent to which India might be capable of supplying cotton, in the event of an increased demand for it in Europe.

We have, &c.
(signed) J. H. Littler.
F. Currie,
J. Lewis.

Fort William, 16 May 1851.

(No. 1317.)

OFFICE MEMORANDUM.

Foreign Department, Camp, Moojaraie, 26 April 1851.

READ extract from the proceedings of the Governor-general in Council in the Home Department, No. 20, dated 15th January 1848, relative to the extent to which India might be capable of supplying cotton, in the event of an increased demand for it either in England or elsewhere.

Read also the two following despatches, dated respectively the 25th November and 4th December last, Nos. 76 and 159, from the Governor-general's agent in Bundelcund and for the affairs of Scindia's dominions, respecting the produce of cotton in the native states of Bundelcund and Scindia's territory.

(No. 76 of 1850.)

From G. A. Bushby, Esq., Agent Governor-General, Bundelcund, to Sir H. M. Elliot, K. C. B., Secretary to the Government of India with the Governor-General, Camp.

Sir,

WITH reference to your letter, No. 247, dated the 28th January 1848, I have the honour to forward the copy of a letter, No. 141, dated the 3d ultimo, from Captain Ellis, political Assistant for Bundelcund, with a statement, from which it will be seen that the Bundelcund Native States do not produce much cotton, and that very little of the land is suitable to the growth of a good merchantable article. The stated expense of conveyance to Calpee cannot be depended on; it varies in the return from the different districts in a manner not to be explained by any relative difference in distance.

The

TABULAR STATEMENT of Replies furnished by the States of Bundelcund to the Queries regarding Cultivation and Begahs of 100 Square Hathas; called for by letter No. 31, dated 14 February 1848, from the Agent to the Governor-

NAME of STATE.	What is the Price of Cotton, Freed from Seed, at the Principal Marts in your District?	At what Price does the Ryot Sell his Cotton, Cleaned or Uncleaned, with or without Advances?
1. Jhansi	Price varies, according to the quality of the season, from Rs. 6. 10, to Rs. 10. 12.	The kupas, or uncleaned cotton, is sold by the ryots at 20 seers per rupee, and the ruè, or cleaned cotton, at six seers per rupee; when advances are made, one seer extra of the kupas, and one quarter seer extra of the ruè is given.
2. Chutturpore	Price varies, according to the quality of the season, from eight to ten rupees per maund.	Kupas at from Rs. 2. 8. to Rs. 4. 8. per maund; if advances are made a difference of four annas per maund is made. The ryot seldom sells the cotton after cleaning it.
3. Tehrie	Average price per maund is Rs. 8. 7.	Kupas at 17 seers per rupee, and ruè at eight rupees per maund. When advances are made in Asar (June and July) interest is allowed in Aghan (November and December), at the rate of two annas per rupee on the amount advanced.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 101

I.
Bengal and
North Western
Provinces.

The Bundelcund cotton and Gwalior cotton is chiefly grown in our own districts on the Jumna, and in Scindia's districts of Toorghur, Seekurwaree, &c., adjoining the Chumbul river. Several gomashas of different soucars, from Agra, Etawa, Kuchowra and Pinahut, have come during the present year to settle at Umbah, in Toorghur. They have bought this season one lac of rupees of cotton from the zemindars of Doondree, Umbah and Aonah (villages of this district), and they would very greatly extend their purchases if a gunj were built at Umbah, a measure which has been recommended to the durbar by Lieutenant-colonel Sir Richmond Shakespear, who on a former occasion had succeeded in getting orders from the Mama Saheb putting the cotton duties on a very satisfactory footing.

Rowanahs are prepared in Gwalior and sold in the districts along the Chumbul to the merchants; the duty is eight annas per bullock load, and one payment clears the load to the frontier.

Much cotton is grown on the Chumbul, and of so superior a quality, that the American planters in the Government employ sent to Bagcheen, in Seekurwaree, for its seed. The price of Bagcheenee cotton at Mirzapore is 20, while that of cotton generally from the North Western Provinces is 17.

A gunj had been established by the intercession of this officer some time ago at Jora Alumpore, in Seekurwaree, for the cotton merchants, they subscribing a portion of the cost and the durbar the remainder, to which terms the merchants frequenting Umbah are also prepared to assent.

I have, &c.
(signed) G. A. Bushby,
Agent Governor-General.

Bundelcund Agency Office, Camp, Calpee,
25 November 1850.

(No. 141.)

From Captain R. R. W. Ellis, Political Assistant for Bundelcund, to G. A. Bushby, Esq., Agent Governor-General for Bundelcund, Jhansi.

Sir,

IN pursuance of the instructions contained in letter No. 31, dated 14th February 1848, from Colonel Sleeman, directing me to call upon the different chiefs of Bundelcund for replies to the queries proposed by the Honourable the Court of Directors regarding the cultivation of cotton in this part of the country, I have the honour to forward a tabular statement, giving such information as has been elicited upon the subject.

The delay in forwarding this statement has been owing to my having had to call repeatedly upon some of the chiefs, before the required information was supplied, and to that now procured from Datea having only been received the day before yesterday.

I have, &c.
(signed) R. R. W. Ellis,
Political Assistant for Bundelcund.

Jhansi, Political Assistant's Office,
3 October 1850.

of Cotton, the Calculations being made in the Company's Rupees, and Maund of 40 Seers of 80 Company's Rupees each, General, in pursuance of Orders from the Secretary to the Government of India, No. 247, dated 28 January 1848.

What is the Expense of Cleaning Cotton by the Churka or Foot-Rollers, or by any other Method which may be in use?	What are the Expenses of Conveying Cotton to the Nearest Port of Shipment?	What is the Average Produce of Cotton per Begah or Acre?	What is the Quantity of Land under Cultivation with Cotton, and to what Extent is it probable that the Cultivation could be carried in the event of an increased Demand?
Six annas per maund	-- The cost of transporting cotton from Jhansi to Calpee varies from six to seven annas per maund.	-- A begah of land in a good season yields a maund of kupas.	-- About 3,000 begahs, which might be increased to 3,500.
Eight annas per maund	-- One quarter of an anna or three pie per maund for each coss.	-- From 1 to 172 maunds per begah.	-- About 6,000 begahs, which might be increased to 8,000 begahs.
Seven annas per maund	-- Costs of conveying cotton from the Tehrie district to Calpee, average from seven to eight annas per maund.	-- Twenty seers to one maund per begah.	-- The soil of this district is kankar, and very stony; very little cotton is cultivated in consequence, and could not be increased.

(continued)

TABULAR STATEMENT of Replies furnished by the States of Bundelcund to the Queries regarding

NAME of STATE.	What is the Price of Cotton, Freed from Seed, at the Principal Marts in your District?	At what Price does the Ryot Sell his Cotton, Cleaned or Uncleaned, with or without Advances?
4. Datia - - -	-- Varies from Rs.7. 14. to Rs.8. 4. per maund.	- - Kupas at the rate of one or one and a half, and ruè at from two to four chuttacks above the bazar rate. Interest is allowed upon advances made, but there is no fixed rate of charging interest.
5. Bijawar - - -	-- The cotton used in this district is brought from Garha Mundla, and retailed at about Rs.8. 12. a maund.	- - - - -
6. Punnah - - -	-- Average price is seven rupees per maund.	- - Kupas can be purchased from ryots at Rs.2. 4. or two rupees per maund when advances are made.
7. Chirkari - - -	-- Average price is Rs.6. 14. 9. per maund.	- - Kupas was sold last year at the rate of 20 to 22 seers per rupee, and ruè at the rate of seven rupees, or Rs.6. 9. per maund when advances were made.
8. Sumptur - - -	-- Varies, according to the quality of the season; from seven to twenty rupees per maund in seasons of great scarcity.	- - Kupas was sold last year at 18 seers per rupee, and ruè at Rs.8. 12. per maund: When advances were made, interest at the rate of two per cent. per annum is allowed for the use of the money.*

* Query, Two annas per rupee? See No. 3, Tehrie, of this Statement.

Jhansi, Political Assistant's Office, }
3 October 1850. }

(No. 159 of 1850.)

From *G. A. Bushby*, Esq., Agent Governor-General for Scindia's Dominions, to Sir *Henry M. Elliot*, K.C.B., Secretary to the Government of India, with the Governor-General, Head Quarters.

Sir,

I SUBMITTED from my Bundelcund office, on the 25th ultimo, No. 76, some tabular information respecting the cotton grown in the Bundelcund states, and other particulars respecting the cotton grown in the districts adjoining the Chumbul in Scindia's country, of which the Bagcheenee, in the Seekurwaree district, is a peculiarly good and valuable kind of cotton.

2. I have received, since my letter was written, further interesting details on the subject from Lieutenant-colonel Sir R. Shakespear, my assistant at the Gwalior Residency, in continuation of the report from that officer, forwarded to the Government with my predecessor's letter, No. 79, dated the 15th June 1847.

3. I beg that the annexed extract paragraphs, 1 to 11 inclusive, and copy of the postscript of the communication above referred to from Sir Richmond Shakespear, may be brought to the notice of the Most Noble the Governor-general.

4. We have launched, at last, I hope, into an honest and effectual experiment of revenue reform in Toorghur, which soobah contains six districts, favourable to the production of cotton, and we may therefore anticipate a security and activity which will be greatly beneficial to the interests of the cotton trade. The latest arrangements with the durbar for the improvement of the administration of the Toorghur districts is reported in a despatch from Lieutenant-colonel Sir R. Shakespear, No. 752, dated the 30th ultimo, of which I also enclose a transcript.

5. I beg to add, for the information of the Governor-General, copy of a report from Lieutenant-colonel Sir Richmond Shakespear, No. 757, dated the 3d instant, in continuation

Cultivation of Cotton, the Calculations being made in the Company's Rupee, &c.—*continued.*

What is the Expense of Cleansing Cotton by the Churka or Foot-Rollers, or by any other Method which may be in use?	What are the Expenses of Conveying Cotton to the Nearest Port of Shipment?	What is the Average Produce of Cotton per Begah or Acre?	What is the Quantity of Land under Cultivation with Cotton, and to what Extent is it probable that the Cultivation could be carried in the event of an increased Demand?
Four annas per maund	-- Costs of conveying cotton to Koonch average from one and a half to three annas per maund.	-- One maund per begah in fair season.	-- About 20,000 begahs, which might be increased to 22,000 or 23,000 begahs.
- - - - -	- - - - -	- - - - -	-- The soil in this territory is very strong, and no cotton is grown in consequence.
Eightannas per maund	-- One anna per maund per stage.	-- A begah of land last year yielded two and a quarter maunds of kupas, which when cleaned weighed 30 seers.	-- About 1,000 begahs, which might be slightly increased.
Eightannas per maund	-- Conveying cotton from this district to the Jumna costs about four annas, nine pie per maund.	-- A begah of land in good season yields from two to two maunds and 30 seers of kupas.	-- About 29,200 begahs, which might be increased to about 40,000 begahs.
Eleven annas per maund	-- Conveying cotton from this district to Koonch costs about two annas per maund.	-- From 10 to 30 seers of kupas per begah of 105 haths square.	-- About 50,000 begahs, which might be increased to 60,000 begahs.

(signed) *R. R. W. Ellis,*
Political Assistant for Bundelcund.

(True copy.)
(signed) *G. A. Bushby,* Agent, Governor-General.

ation of the despatches No. 561, dated the 27th August, and No. 592, dated the 10th September last, submitted with my letter No. 150, dated the 9th of November, describing some of the details for the revenue reform in progress in Scindiah's northern districts. I am sorry to have to report the death of Kapa Shastree, the President of the Adawlut, which has recently occurred at the Lushkur, and is a great misfortune.

Gwalior Agency Office, Camp Sumptur,
4 December 1850.

I have, &c.
(signed) *G. A. Bushby,*
Agent Governor-General for
Scindiah's Dominions.

EXTRACT from a Letter from Lieutenant-colonel Sir *Richmond Shakespear*, Assistant for Scindiah's Dominions, to *G. A. Bushby*, Esq., Agent to the Governor-General for Scindiah's Dominions, No. 739 of 1850, dated 26 November 1850.

PARA. 1 to 11. I beg your attention to the postscript of my letter No. 262, of date 18th April last, which relates to the cotton trade.

2. Mr. Hamilton Bell has long been employed by his Honour the Lieutenant-governor in different experiments, and in collecting information. This gentleman wrote to me lately, saying that he thought that to increase the supply of cotton, more might be done in the districts on this side of the Chumbul than in any other portion of the North Western Provinces.

3. At Bagcheenee, which is in Seekurwaree, there is a plant, the cotton from which is so superior that it fetches four annas more for every 15 seers than the cotton of other places. This is at the Mirzapore market.

296—Sess. 2.

N 4

4. When

I.
Bengal and
North Western
Provinces.

4. When at Umbah in April last, I strongly advised the Soobah of Toorghur to get the seed: he did so, and distributed it to the zemindars of Umbah pergunnah, and 400 beegas were cultivated with this seed in that pergunnah alone; most fortunately, the season has been favourable and the cotton is now being plucked. I have compared it with other cotton grown in the same pergunnah from common seed, and the superiority is very evident. Those who have examined the two, say that the price of Bagcheenee seed cotton will be greatly above the other.

5. The gunj at Umbah has been commenced, and a substantial foundation has been completed; eight of the houses are ready and occupied. I mentioned in the enclosure to No. 262, that 14 gomashtas had been sent by the Agra, Etawah, Kuchowra and Pinahut merchants to Umbah, and that their purchases last year were valued at one lac of rupees. But this was the first year, and these purchases were only from three districts.

6. The whole line of the Chumbul, from Subbulghur to Altair, 95 miles in length by 10 deep, is favourable to the cotton plant; the enormous interests we have at stake in this trade render it incumbent on us to encourage the growth of cotton and facilitate its exportation.

7. But the experience of the last seven years has convinced me that it is utterly useless to hope that any reform will be carried out unless we ourselves constantly watch and foster it.

8. As one instance, I may mention that in 1845, I gave leases to the zemindars of every village in the six districts of Toorghur, and the amils were the paid servants of the Government. This measure was agreed to by the durbar, and strongly approved of by Colonel Sleeman. Para. 8 of my letter No. 262, will show how completely the durbar had contrived, within five years, to upset this reform.

9. Subsequent to the leases, I got from the durbar an agreement to pass cotton by rowannahs; eight annas paid at certain convenient posts, cleared a bullock load to the frontier. It is hardly possible to believe that, with such a stipulation, the durbar should actually farm the collection of the cotton duties; yet the farmer of one year gave me a petition complaining that the contract had been given to another person. And the durbar has gravely complained to me of the serious loss which the eight annas duty has entailed on them. Of course, the farmer insisted on a reduction in the contract, as the rate was reduced; but he must have cleared an immense profit. I have spent more than an hour trying to convince the Mama Sahib and his dewan that, by giving 10,000 rowannahs to an agent, and making him restore them or 5,000 rupees, they would have a simple and effectual mode of collecting cotton duties, but have entirely failed to convince them. The loss is theirs, and no concern of ours.

10. My reason for troubling you with this letter is to point out that no extensive encouragement can be given to the growth of cotton until a secure and fair settlement of the revenue has been made, and a regular system established of officers for collecting that revenue, all paid by the Sirkar, and controlled by a respectable Soobah. Until this is done capitalists will not advance to the cultivator to induce him to sow cotton; they will only purchase what they may find offered for sale, which of itself is not sufficient to meet our wants.

11. If the cultivation of cotton is really so important a question as I imagine, we ought to take full advantage of the opportunity we now enjoy during the minority of the Maharajah. It is surely a matter of serious consequence to us to bring the 950 square miles of land which Mr. Bell pronounces so favourable for cotton, into a settled state. It is hopeless to expect the durbar to do it unless we come very prominently forward; nothing whatever resulted from my friendly remonstrances in April last (as given in the enclosure to my letter No. 262). Not a single order was passed for the payment of Government servants; and though the three contractors were told that they must give leases to the zemindars, they are still in office as unpaid servants responsible for the whole revenue of their districts, and therefore altogether independent of the Soobah, and anxious to thwart him in every way.

P.S.—Mr. Bell is not a theorist, but a practical man, who, apart from his experiments for the Government, has an estate of his own near Agra. It was in 1846 that I heard he had got seed from Bagcheenee, and he last year made purchases of cotton in Seekurwaree: the opinion of such a man must have weight.

Of the computed area of 950 square miles, I do not suppose it possible that, even under the most favourable circumstances, above one-half could be brought under cotton cultivation; still, 400 square miles of good soil, which has been proved so favourable to the cotton plant, ought to receive our constant and careful attention. Advances to the zemindars by capitalists will do much, but more is required if we hope to create a really extensive cotton field; for instance, the usual khureef cultivation which has hitherto prevailed requires little labour, as compared to that of cotton; to carry on the latter, the zemindars must induce more labourers to settle in their villages. It is unlikely they will do so, unless they feel secure of their own tenure of their leases. A great impetus will be given this year to the cultivation of cotton by the extraordinary abundance of the other produce of the khureef harvest. Bajara, jesar, and similar grains are so abundant that the zemindars who have grown them alone cannot find purchasers, but cotton is much inquired for, and readily bought up; all along the Chumbul the khureef harvest is 12 annas in the rupee. Full details regarding the reform of the cotton duties will be found in my letter to Colonel Sleeman

TO, PROMOTE THE CULTIVATION OF COTTON IN INDIA. 105

Sleeman, No. 351, of date 11th June 1847; the sketch which accompanied the letter may be useful. The rate of duty has been strictly abided by; the purchasers have realised great profits, but the durbar has suffered in consequence of all the arrangements made (as detailed in para. 8,) for collecting the duties having been set aside. It is most vexatious to find that while everything progresses and improves on the other side of the Chumbul, everything here retrogrades.

(signed) *R. Shakespear*,
Assistant for Scindiah's Dominions.

I.
Bengal and
North Western
Provinces.

(No. 752 of 1850.)

From Lieutenant-Colonel Sir *R. Shakespear*, Assistant for the Affairs of Scindiah's Dominions,
to *G. A. Bushby*, Esq., Agent, Governor-General for Scindiah's Dominions.

Sir,

I HAVE the honour to inform you that I have effected the following arrangements for the six districts of Toorghur.

1st. The detail of expenditure as given in the enclosure to my letter, No. 739, of date 26th instant, to be carried out without any alteration.

2d. The three amils (of Dhoondree, Oomree and Billour), who held contracts to be removed to other districts, and others appointed in consultation with the soobah.

3d. Jignee and Bhind to be no longer considered under the soobah of Toorghur.

2. The last of these arrangements requires explanation. I find that the period of the contract for purgunnah Bhind, which was given during my absence at the Hills, has not expired, and the contractor being an influential person, I think it would be imprudent to secure for the soobah his enmity by placing the one nominally subordinate to the other. The amil of Jignee has also powerful friends, and though his district is strictly puttah bundee, still the ill-will between him and the soobah is so great, that they will not be able to work together.

3. Under these circumstances I have thought it better to secure an arrangement which I think will work well, confining it to six districts, and a net revenue of six and a half lacs of rupees, to trying a more extensive but not so safe an experiment.

4. If this experiment succeeds we may be able to get the durbar to try it in other places, and with so intelligent a soobah I have great hopes of success.

5. The Mama Sahib offered to place 15 lacs of revenue under him, but on examination I found several contracts were included; but the Mama did not mean ill by the proposal.

6. I have come to an understanding with the dewan; he acknowledges his error in having upset the arrangement of 1845, but pleads in extenuation of his not having fixed the details of the expenditure in such districts as Gaormee, that such a measure would be most unpopular with the amils; he says that he can secure, that in puttah lundee districts the zemindars have leases, and that the amils shall not take more from them (without punishment) than is entered in the Kabopleeat, but the utmost he can promise to do in regulating the expenditure is to fix its total amount, leaving the details to the amils. In fact he has told me that he dare not interfere so directly with the perquisites of the amils.

7. A plain honest admission of this sort must always have weight, and we must be contented with the best system we can obtain, which is a very great improvement on the contract.

8. As to the cotton duty, I was shown to-day the man who has the collection, and who said in open durbar that he did not farm them, but was a paid servant of the State. I asked how it was that the sale of cotton had increased so greatly as to require a new mart at Umbah, where 14 Agra firms in one year brought in one lac of cotton from three districts, and yet the durbar's collections of cotton duties decreased? and the dewan confessed that the fault lay in the arrangements which had existed until lately. I heard, when going to the durbar, that the whole subject had been much discussed. I think that all parties are convinced that the increase of the trade must be as profitable to the durbar as to our Government.

Gwalior Residency, Camp Shikarghai,
30 November 1850.

I have, &c.
(signed) *R. Shakespear*,
Assistant for the Affairs of
Scindiah's Dominions.

(True copies.)
(signed) *G. A. Bushby*,
Agent, Governor-general.

I.
Bengal and
North Western
Provinces.

(No. 757 of 1850.)

From Lieutenant-Colonel Sir R. Shakespear, Assistant for Scindiah's Dominions, to
G. A. Bushby, Esq., Agent Governor-General for Scindiah's Dominions.

Sir,

IN continuation of my letter No. 752, of date 30th ultimo, regarding the satisfactory arrangement which has been made for the six Toorghur districts, I have the honour to report, that yesterday the Mamma Sahib sent to me the dewan with the soobah of Toorghur, and all the details entered in that letter were gone over, and the dewan promised me to give the soobah his cordial and sincere aid.

2. If the dewan is really a faithful servant of the State he will act up to his promise, for this soobah has already been the means of saving 22,500 rupees per annum to the State.

3. The details of this are as follows; when talking with the dewan over the arrangements at Punniar, he said that there would be a loss of 22,500 rupees per annum, and that that sum ought to be deducted from the estimated revenue of Toorghur (*i. e.* from 6,50,000 rupees), before 12 per cent. was allowed for expenses of collection. I assured him that there must be some error, but he said that he had sent an ameen to give the new leases, who with the soobah had reported that there must be a reduction of 22,500 rupees this year. I sent for my letter-book, and turning to the enclosure to my letter to you, No. 262, of 18 April last, I read to him the soobah's estimate, and showed him that it only entailed a loss of 765 rupees in the year. The dewan appeared shocked, and said he would make inquiries. Yesterday I asked the soobah, before the dewan, whether he was prepared to make the rent-roll agree with his statement given in April, and he said that it was on condition that the leases were to be for five years, to which the dewan agreed; and it was decided that the ameen should be recalled. I ought to have mentioned, that the dewan told me that he had rejected the proposal to reduce the 22,500 rupees. He is a hardworking man, who has the Mamma's perfect confidence, but he has much more thrown into his hands than he can possibly attend to properly, and is not a man of superior ability.

4. After the details of the Toorghur districts had been settled, I was introduced to Keshoo Rao Bhow, who has been appointed soobah of Jignee, Seekurwaree, Subhulghur, Sheopore, and Samowlee, all putta bundee districts, except the last. This man is the son of Dajee Shunkur, the ablest revenue officer the durbar had in its service when I was here before. He died while I was at the Hills, and on my urging the Mamma Sahib to make some satisfactory arrangement, at any rate for Jignee and Seekurwaree, I was told that he found the soobah (whose appointment was reported in my letter, No. 561 of August 27 last, para. 3.) was not equal to the appointment, and that the son of Dajee Shunkur would be a better man for it. I said that the choice of the man was a question with which I had no concern, but an able man as soobah was absolutely necessary.

5. The leases in Jignee and Seekurwaree having been given by my own hand in 1846, I feel sure that in those two districts a *bonâ fide* settlement will be made; for if not made, the zemindars will complain that I have not the same confidence regarding Subulghur and Sheopore, and I have not thought it prudent to insist on the details of expenditure being defined as in the six Toorghur districts, simply because the dewan shows so great an aversion to the proposal; he tells me that if the detail system really answers this year in Toorghur, he will carry it on, to other districts.

* Mow Kitowlee.
Atainda.
Buaina.
Bugwassa.
Nowrabad Kotwal.
Goremee.
Bhuhadoorpoor.
Bhind.

6. A third soobah, by name Narneu Rao, was also introduced to me yesterday; his districts are to be as per margin;* they are all small districts, lying to the south of Bind, and they are all stated to be puttah bundee, excepting Bhind, which is farmed to the man who has now been appointed soobah of Seekurwarree; the putta bundee in each district, except Bhind, has been ordered, and the soobah is an intelligent, experienced person, who has the good-will of the Mamma and the dewan, and who will therefore, I hope, have influence with the amils; but that the dewan's expectation of preventing more than the lease being taken from the zemindars should be verified, is, I think, most improbable; and I am very sure that the allowance for expenditure, which under the heading of Mehal Khurch is allowed the amils, will be considered by them as legitimate perquisites; they will keep up no establishment of burkundazes, but trust to threats of bringing guns from the Lushkur to compel payment of revenue; in this way a petty zemindar, who would be brought to order at once by a few burkundazes, remains for days at open dispute with his amils; others then join him, and so the district is said to be disturbed, and to require aid from the durbar. In short, to our ideas the districts are always in a state of insubordination; but in the eyes of the people there is a vast improvement upon what existed previous to the treaty, and in the eyes of the durbar the system is as near perfection as is at all necessary.

7. Our aid is hardly ever called for, and the revenue is, one way or the other, collected. No highway robbery has been reported for some time, and dacoities are unknown. All this is satisfactory, but still the internal administration of the country is very defective, and, as stated in my letter No. 561, of date 27th August, para. 5, I despair of introducing what we consider good government; also *vide* para. 10 of letter No. 592, of 10th September 1850.

8. The soobah of Toorghur was appointed during my absence at the Hills; he is the only man of real ability I have met with for revenue details; of course, I am obliged to be very cautious

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 107

I.
Bengal and
North Western
Provinces.

cautious lest I cause a jealousy between him and the Dewan. As far as I can judge, the 22,500 rupees proposal was an effort, through the Ameen, to ruin this Soobah, who is thought to be too willing to carry out reforms. I acquit the dewan of being concerned in the plot, and think he believed the ameen's statement that the reduction was made at the soobah's desire. I have ascertained that the soobah knew nothing about it. If such an intrigue would occasion surprise to others, it ought not to me, for I could quote worse instances.

9. With such materials it would be unreasonable to expect to do much good, but this would not justify our not trying to do good.

Gwalior Residency, Camp Shikarghai,
3 December 1850.

I have, &c.
(signed) *R. Shakespear*,
Assistant for Scindiah's Dominions.

P.S.—Since the above was written I have seen the Mamma Sahib, who says that Dajee Shunkur's son refuses the soobahship of Seekurwaree, &c.; and that, in the event of his continuing to refuse, he will appoint Baba Apteh. Baba Apteh was for many years Soobah of Malwa. Mr. Hamilton had a very high opinion of him, but the late minister, Ram Rao Phalkeeah, insisted on his removal. After this he came to Gwalior, and tried to cause ill will between the Maharaja and the Mamma, and was banished (when Captain Ross was here) The Mamma Sahib recalled him lately, and has proposed him for the present appointment; and, on the principle that the selection of agents rests with the Mamma, I have not objected. I believe the man to be in debt, to be extravagant, but he is intelligent and active. The Mamma Sahib would most willingly order any reforms I might think necessary, and select any agents I might name. I should be very unreasonable if I found fault with him, but it is obvious that I alone should only occasion confusion by interfering in such matters. The Mamma must select his own agents, and I through him must endeavour to urge him to bring about reforms.

(signed) *R. Shakespear*.

(True copy.)

(signed) *G. A. Bushby*,
Agent to Governor-General.

Ordered, that copies of the two foregoing despatches be furnished to the Home Department of the Government of India, with reference to the extract from that department under acknowledgment.

(signed) *H. M. Elliot*,
Secretary to the Government of India with the Governor-General.

Revenue Department, 10 November (No. 9) 1847.

Our Governor of the Presidency of Fort William in Bengal.

(Circular.)

Cotton.

Para. 1. We transmit herewith 25 copies of a memorandum which has been submitted to us by Dr. Royle, which contains much valuable information in respect to the results of the experiments for introducing the American descriptions of cotton into different parts of India, and for improving the indigenous cotton; and also with regard to the probability of Indian cotton entering into successful competition with the produce of America in the English market.

2. We are desirous of procuring information as to the extent to which India might be capable of supplying cotton, in the event of an increased demand for it, either in this country or elsewhere; and we have accordingly framed the queries in the margin,* which we wish you to circulate among the collectors of land revenue

- * 1. What is the price of cotton freed from seed at the principal mart or marts in your district?
2. At what price does the ryot sell his cotton, cleaned or uncleaned, and with or without advances?
3. What is the expense of cleaning cotton by the churka or foot-roller, or by any other method which may be in use?
4. What are the expenses of conveying cotton to the nearest port for shipment?
5. What is the average price of cotton per beega or acre?
6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation should be carried in the event of an increased demand?

N.B. The beega, maund, and rupee used in answering these questions must be defined.

I.
Bengal and
North Western
Provinces.

revenue under your Presidency, and also among the political agents resident in such native states as are known to produce cotton, with instructions to furnish concise replies on the several points indicated.

London,
10 November 1847.

We are, &c.
(signed) *H. St. G. Tucker,*
J. L. Lushington,
&c. &c.

OBSERVATIONS on the Results of the Experimental Measures for improving the Culture of Cotton in India.

At the point which the experimental measures adopted by the East India Company for improving the culture of Indian cotton, and its preparation for the market, have now attained, it seems desirable to collect and condense the results at which we have hitherto arrived, and to endeavour to attain from them a satisfactory solution of the following propositions: first, the practicability of India contending with America in producing even a fair quality of cotton; and secondly, the probability of Indian cotton, if sent in a clean state to market, continuing to be employed by any great number of manufacturers, even should American cotton again fall as low in price as it has done.

Cost of American
cotton.

On the first establishment of the cotton experiments in 1840, I made inquiries on the expenses of culture in America, and found that a cotton planter had first to purchase his land, and pay for its being cleared; if it had been cleared, then he had to pay a higher price. He had also to purchase slaves, cattle, agricultural implements, as well as saw-gins, and to erect gin-houses, besides other farm buildings.

The annual expenses consist, besides the interest of the money expended and the deterioration of property, of pay of overseers, food for slaves and for cattle, as also of incidental expenses.

Though the price of land may therefore be small in the first instance, the subsequent and annual expenses are so considerable, that the planter, even with enormous returns per acre, as, for instance, from 300 to 600 lbs. of clean cotton, is yet unable to produce it at a lower cost than about 3*d.* a pound. This accords very nearly with the evidence of Mr. Joshua Bates, of the house of Baring & Co., and also with what I recently learnt at Manchester, that cotton could not, on an average, be produced under 3*d.* a pound, and this without profit to the owner of the property, or the expenses to Liverpool, and from that to the mills at Manchester, &c. The diminution in the imports of cotton from America during the present year is considered to have been occasioned chiefly by restricted cultivation in the United States, in consequence of the low prices of 1846, when fair New Orleans cotton sold at Liverpool for 3½*d.* a pound.

Cost and prices of
Indian cotton.

On careful inquiry into the cost and sale prices of cotton in different parts of India, I find the ryot in some districts sells his cotton without the seed, that is, comparatively clean cotton, for 1*d.* a pound, and readily for 1½*d.* a pound, while in other districts he obtains 1½*d.*, and, in a few, as much as 2½*d.* a pound. The expenses of conveyance are calculated at 1*d.* a pound generally, but it is much less from some districts, and therefore we have the cotton of India, including the best Surats, selling at Liverpool at from 3*d.* to 5*d.* per pound, though the latter sometimes bring as much as 7*d.* and 8*d.* a pound on an average, as in the years 1839 and 1835. It has again during this year been selling for 6*d.* and 7*d.* a pound, and it has been stated in the late Bombay Report on Cotton, that an advance of ½*d.* per pound upon a price of 3*d.*, or 15 per cent., is sufficient to produce a healthy action upon the cotton trade of Bombay; while Mr. Bell equally calculates that 4*d.* a pound at Liverpool will pay all expenses, and yield a profit for the superior kind of cotton which he has cultivated near Agra. It is evident, therefore, that in point of price, India (notwithstanding the small returns of produce, which do not amount on an average to 100 lbs. per acre of clear

clean cotton), is able to contend successfully with America, and will be able to do still more successfully when all unnecessary expenses are diminished between the farm and the factory, and these are paid on a clean and unadulterated article instead of on cotton which contains about one-fourth of dirt and refuse.

I.
Bengal and
North Western
Provinces.

The next point, and that of nearly as great importance as the former, is the quality of the cotton which can be obtained from India. This may be noticed under the heads of American and of Indian cotton.

Though the New Orleans cotton failed in the Doab, as it did in some other parts of India, it is now well known to have succeeded completely in some of the southern provinces, as in the Southern Mahratta country, and in the Coimbatore district. In the former, from 25,000 to 30,000 acres were in cultivation last year with New Orleans cotton; this was both grown and cleaned by the hand saw-gin by the natives themselves, and then sold to Government for 66½ rupees the candy of 784 lbs., and cost altogether, when sold at Manchester, under 4*d.* a pound. Of the 1,000 bales which have arrived, 500 have been sold for 6½*d.* a pound at Manchester; the rest still remains unsold at Liverpool.

Quality of American cotton grown in India.

Dr. Wight's cotton, cultivated in Coimbatore, is still more highly valued than that from Dharwar, being considered quite equal to fair New Orleans cotton, and valued at 6¾*d.* per pound. Several hundred bales have, I believe, been despatched to Liverpool by Dr. Wight, and he states that it may be landed there for 3½*d.* per pound. Mr. Turner, President of the Commercial Association of Manchester, in reply to some queries which I addressed to him last week, states, "I assure you the shipment of 1,000 bales of such cotton,* as per 'Quentin Leitch,' is an event of no small interest and importance. Let the Court, then, persevere by all means in introducing and encouraging the cultivation of American seed cotton in every district of India which is suitable for its growth, but especially in Coimbatore and Tinnevely."

The success which has attended the cultivation of American cotton in the above districts has had an unfavourable effect on the Indian cotton, as far as the opinions of some of the principal manufacturers are concerned, inasmuch as they seem to think, from the success attending what they consider the best kind of cotton, it is useless or unnecessary to take any trouble with the indigenous cotton, as unfit to supply the place of American cotton in our manufactures. Such being the opinions of some of the principal spinners, I found some difficulty in forming a correct opinion respecting the real value of Indian cotton, as I had heard different opinions from some others. In this dilemma I was induced to write to Mr. Turner, as above stated, requesting him to give me his deliberate opinion on the importance of the improved cleaning and culture of Indian cotton, and on the probability of such cotton continuing to be employed by spinners, even when American cotton is at a low price. I annex an extract from his letter in the margin,† as containing much valuable information, which is important from his position at the head of the Commercial Association of Manchester, and from his being himself one of the largest consumers of Indian cotton.

Quality of Indian cotton.

The

* Grown by the ryots in Dharwar from New Orleans seed.

† "You ask, what is the Court to do as regards those districts in which the American plant will not thrive? My answer is, Encourage the growth of the best cotton which will grow; induce the natives to pick it carefully and to clean it effectually (which Mr. Mercer assures me can be done by the saw-gin, if the kupas is only kept free from the dry friable leaves of the plant by careful picking); discourage or prevent, by every possible means, the system of wilful adulteration, so injurious and so notorious; abolish the system of conveyance by bullocks, by making roads on which carts can travel; or, still better, make, or encourage others to make, railroads, by which means the cotton can be sent down in bales, and thus be preserved more free from dirt and adulteration.

"Such cotton, though not equal to what I expect will yet be grown in India from American seed, will always be saleable and useful to the manufacturers in this country at its fair relative value, compared with other cotton; and, if such cotton is shipped free from seeds, sand, and other filth which have heretofore prevented its extensive use, I have no doubt it will generally prove saleable at a price which will remunerate the growers.

"It is rather difficult to answer your question as to 'the real value of Indian cotton, supposing, the staple and character remaining as it is, you are enabled to have it clean picked and carefully ginned. There are various qualities of Indian cotton; the Broach cotton is generally the best. I also consider the Coompta cotton to have many good qualities; the best guide I can give you as to what I consider the relative value is, that, supposing Broach cotton to be carefully picked and saw-ginned, so as to be free from the minute fragments of leaf, which formed the great objection to the

I.
Bengal and
North Western
Provinces.

The Broach cotton is that generally considered the best, that from the Dharwar district, commonly called Coompta, is also esteemed for many good qualities, among which is strength of fibre. The indigenous cottons of the Bengal Presidency, being at present chiefly exported to China, are less known at Manchester, though the Bengal cotton is usually considered short and woolly in the staple. The cotton of Bundelcund has long been famous in India, but is not distinguished here.

It is evident that Indian cotton possesses some good qualities of its own; among these I may mention colour, swelling of the fibre in bleaching, and particularly the facility with which it takes colours in dyeing. There can be no doubt, therefore, of the importance of improving the indigenous cottons of India, even though they are not applicable to all the purposes of American cotton.

Improved Indian
cotton.

Various attempts have been made to improve the indigenous cottons of India in the course of the present experiments, both by cultivation, and by sending them in a cleaner state to market. Broach cotton, cleaned by the saw-gin by Dr. Burn, was approved of, and sold well at Liverpool. The cotton of Khandeish, cleaned by the saw-gin by Mr. Simpson and Mr. Blount, sold for 124 and 132 rupees the candy at Bombay, when cotton from New Orleans seed sold only for 113 and 120 rupees; though the preference of the Bombay merchants has not been confirmed at Manchester, where none of the samples of indigenous cotton, however clean, were considered equal to that grown from American seed. The indigenous cotton of the Dharwar district, or Coompta, has already been mentioned; it has one defect, which may easily be removed; but it is described by Mr. North, who is Mr. Turner's partner, and in charge of the North Shore Mills, as "about the best specimen of East Indian cotton we ever worked; in the carding and spinning it has given unqualified satisfaction." The indigenous cotton of Coimbatore, cleaned by Dr. Wight, has not yet been received.

The native cotton, cleaned by the saw-gins established at Agra, which was shipped to London, and received some months ago, was disapproved of from the shortness of the staple, and from this having been cut in the process of ginning. The cotton sold better than was expected from the then high price of cotton, but it was not considered at all fitted for the purposes of spinning.

Defect of some
saw-ginned cotton.

The method adopted with respect to the Coompta cotton was to purchase the kupas from the ryots, and clean it by the saw-gin. This mode has the advantage of a considerable effect being produced in a comparatively short time; but it has one great defect, which could not have been foreseen, but which has been discovered by the working of the cotton in the mill, and which it is feared will characterise all dirty Indian cotton cleaned by the saw-gin. The defect, as described in the Coompta cotton, is its "being so full of small shell dirt," which "appears to have been broken into such an infinity of minute particles, all adhering most pertinaciously to the cotton, so that it is utterly impossible to eject it." It is conspicuous in the carded cotton, and likewise in the yarn, of both of which I have received specimens, and would necessarily also be conspicuous in cloth made from it.

This defect appears to be owing entirely to the cotton having been carelessly picked, as is the case with almost all Indian cotton, when the bracts and leaves being in a dry state, break up and adhere to the cotton with much tenacity. When the cotton in the process of ginning is being carried by the saws through
the

saw-ginned Coompta cotton which Mr. Mercer sent home, I should order it at 1*d.* per pound below such cotton as the 1,000 bales *ex* 'Quentin Leitch'; and I should order Coompta cotton, similarly cleaned, at 1½*d.* less; so that, supposing the American seed cotton to be worth 6½*d.* I should value saw-ginned Broach 5½*d.* and Coompta 5*d.*

"I believe that if Indian cotton is sent home clean, there will be an increased demand for it; and that it is very unlikely that the spinners will discontinue to use it, even if American cotton recedes from its present value; though of course they would, in such case, only use it at its relative value compared with American. You need not fear that it will go out of use, if, as you say, it can be produced at 1½*d.* per pound by the ryots in India, as we have good ground for supposing that America can produce cotton within 50% per cent. of this price. You must, however, provide good roads, by which this cheap produce can be cheaply and expeditiously conveyed to the port of shipment, and at the same time be preserved free from adulteration."

the narrow grating, the broken leaf seems to be ground into fine spiculæ, which stick into the fibres of the cotton, and adhere to it with so much tenacity as not to be separated, even in the processes of blowing, carding, or spinning. The only remedy is to have the cotton cleanly picked as it ripens, which will add little to its expense, but add one-third to its value.

I.
Bengal and
North Western
Provinces.

Another set of experiments has been made on indigenous cottons, by attempting to improve them by culture, and this not with inferior kinds of seed only, but with the best of different districts. In Broach, Dr. Burn tried the American method of culture on the native cotton. In Dharwar and Belgaum cotton was cultivated from Broach seed,* from that of Omrawuttee, and from that of other districts, and the same course has been followed by Dr. Wight, and in general with favourable results. But the American planters have observed, that in the west of India, as well as in the Nizam's territory, the cultivation of cotton is conducted in a superior style, embracing the drill husbandry and a rotation of crops, but that in the Bengal Presidency, including Bundelcund, the cultivation was susceptible of great improvement. Mr. Terry and Mr. Blount both cultivated the indigenous cottons of India; the one in the Doab, and the other at Goruckpore, and both with very promising results. But they have stated to me that they were prohibited from proceeding with this culture, because the experiments were said to be intended for the introduction of American cotton into India, and not for the improvement of that of India.

Improved culture
of Indian cotton.

The cotton of Bundelcund has long been celebrated in India, but with it has probably often been confounded the cotton of Central India, which used formerly to find its way to the Ganges, but is now chiefly conveyed to Bombay. But Bundelcund itself is, no doubt, well suited to the cultivation of cotton, as it has always been supposed to be, and Mr. Mercer and Mr. Frost, as I have recently learnt, both consider the district as most favourable for the improved culture of cotton. Mr. Mercer would no doubt have succeeded in improving it, had he not been burnt out of his farm during the disturbances in that district in 1841. The cotton of Jaloun and Jhansi was formerly most celebrated, and Mr. Bell now finds that the cotton of Baugcheenee, a district on the south of the Chumbul, near Dholpore, and therefore probably very similar in soil and climate to that of Jaloun and Jhansi, which are not very distant, is that which is at present most in repute. This Baugcheenee cotton is that which Mr. Bell, after numerous experiments on all the varieties of seed which he was able to procure, found to be the best for cultivation in the Doab, and it is sufficiently esteemed by the natives to be able to command a higher price in the local markets. Mr. Bell states, "that a small parcel of the latter cotton which came into this market was instantly taken at about 7½d. per cent. higher than the rates paid for the other best reputed cottons." The quality was moreover highly approved of at Liverpool, for nine bales sent by Mr. Bell to Messrs. Nicol, Duckworth & Co. are reported as "pretty clean, but rather seedy, fair colour, staple fair length," and valued at 4½d. per lb. on the 6th February 1846, when fair qualities of Bowed Georgia were selling for 3½d., and the same quality of New Orleans cotton for 4½d. The samples of this cotton sent this year to the India House, and which I sent to Mr. Turner, were pronounced by him as saleable at 5d. a pound, though the staple was short, provided the cotton in bulk should prove as clean as the samples I sent him. Mr. Tetley, the cotton broker of London, who has been so long employed by the East India Company, values these cottons, supposing the bulk to be equal to the samples in point of cleanliness, at from 6d. to 6½d. per lb., the same price as middling to fair American.

There can be no doubt, therefore, of the goodness of this cotton, and of its fitness for some of our manufactures, and the fact is of importance, because this good cotton is not confined to one village, but may be procured from several of a quality little inferior, as the other sorts do not differ from the Baugcheenee more than from 5 to 7 per cent.

It is important, therefore, to determine whether a further attempt to improve the quality of the cotton in the North Western Provinces should be made, notwithstanding

Importance of
improving cotton
in India.

* This sold at Bombay for 125 rupees the candy, while that from New Orleans seed sold for 118 and 120 rupees.
296—Sess. 2.

I.
Bengal and
North Western
Provinces.

notwithstanding the recent failure of the American planters in the neighbourhood of Calpee. This might be considered decisive of the question, were it not for the fact that the attention of the American planters was chiefly directed to the New Orleans seed, which was found unsuitable to the climate, particularly in the two very dry seasons, which unfortunately occurred at the time of the experiments. Improved culture, as far as it was tried on the native plant, was, as I am informed, attended with favourable results. The great importance of the improved culture of cotton in India is sufficiently admitted by the establishment of the original experiments, and it is not of less consequence in the North Western Provinces than in other parts of India. In fact, the trade in cotton from Calcutta to Europe has greatly diminished, and that to China it is feared will follow the same course, as not only the cotton of the other Presidencies is becoming improved, but the Americans have begun to export their clean cotton to China. It is, therefore, of great importance to improve the cotton of North Western India, either by culture or cleaning, or still better, by both combined; and I have always regretted that one of the American planters was not retained, to endeavour to improve the cotton of the Doab, or rather that of Bundelcund, by the union of improved culture with careful cleaning.

Taking it for granted that the importance of improvement will be admitted, and neglecting the foreign cottons for the present, as unsuitable to the climate, at least with the present modes of culture, it remains to be considered how the native cottons can be improved.

Modes of improv-
ing Indian cotton.

The best method would appear to be, to select the districts where the best cottons are already produced, for the first experiments, as it may be presumed that fewer difficulties will have to be encountered, in improving the culture, or in introducing superior kinds of seed from other districts, if this should be thought expedient, and moreover, the experiments on early picking and careful cleaning would be made on an article which was already known to be of good quality.

Improved culture
of Indian cotton.

The next best method is to introduce good seed into districts where inferior cottons are produced, in order that this may be supplanted by a superior article, hoping that the qualities of the imported seed may be retained in the new situation, when this has the advantage of more careful culture, otherwise it does not follow that the new seed will give an improved produce beyond the first year. This method Mr. Bell has, from his local situation, been compelled to adopt. It has the important characteristic that failure would not deter from other attempts in more favourable situations, yet success under adverse circumstances of soil or climate would greatly stimulate exertion in all other situations.

East India House,
October 1847. *

(signed) *J. Forbes Royle, M. D.*

Home Department, Revenue.—No. 25 of 1848.

To the Honourable the Court of Directors of the East India Company.

Honourable Sirs,

IN continuation of our Letter, No. 18, dated the 11th September last, we have the honour to forward the accompanying copy of a communication from the Government of Bengal, containing the information required by your Honourable Court, regarding the culture of cotton in India.

We have, &c.

(signed) *T. H. Maddock.*
F. Millett.
J. H. Littler.

Fort William, 18 November 1848.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 113

EXTRACT from the Proceedings of the Government of Bengal, in the Revenue Department, under date the 9th February 1848.

(No. 31.)

From *J. W. Dalrymple*, Esq., Officiating Under Secretary to the Government of Bengal, to the Secretary to the Government, North Western Provinces.

Sir,

I AM directed to forward the accompanying copy of a despatch, No. 9, from the Honourable Court of Directors, dated the 10th November last, together with 10 copies of Dr. Royle's memorandum received therewith, and to request that you will, with the permission of his Honour the Lieutenant-governor, take measures to obtain the information required on the several points indicated in para. 2 of the Court's despatch, and furnish the same to this Government for eventual transmission to the Home authorities.

I have, &c.
(signed) *J. W. Dalrymple*,
Officiating Under Secretary to the Government
of Bengal.

Fort William, 9 February 1848.

I.
Bengal and
North Western
Provinces.

No. 3.

Revenue.

EXTRACT from the Proceedings of the Government of Bengal, in the Revenue Department, under date the 9th February 1848.

(No. 97.)

From *J. W. Dalrymple*, Esq., Officiating Under Secretary to the Government of Bengal, to the Secretary to the Sudder Board of Revenue.

Sir,

I AM directed to transmit copy of a despatch, No. 9, from the Honourable Court of Directors, dated the 10th November last, together with 10 copies of Dr. Royle's memorandum received therewith, and to request that the Board will take measures to obtain the information required on the several points indicated in the second para. of the Court's despatch, and submit the same in such a form as may appear best calculated to meet the wishes of the Honourable Court.

I have, &c.
(signed) *J. W. Dalrymple*,
Officiating Under Secretary to the Government
of Bengal.

Fort William, 9 February 1848.

No. 4.

Revenue.

(No. 842.)

From the Under Secretary to the Government of Bengal to *W. Grey*, Esq., Under Secretary to the Government of India, Home Department.

Sir,

IN compliance with the request of the Supreme Government, communicated in Mr. Secretary Bushby's letter, No. 598, of the 1st July last, I am directed by his Honour to transmit, in duplicate, the accompanying copy of a letter, No. 295, from the Secretary, Sudder Board of Revenue, dated the 27th ultimo, with enclosures containing the information required by the Honourable Court of Directors regarding the culture of cotton in India.

I have, &c.
(signed) *W. Seton Karr*,
Under Secretary to the Government of Bengal.

Fort William, 24 October 1848.

Revenue.

(No. 295.)

From the Secretary to the Sudder Board of Revenue to *F. J. Halliday*, Esq., Secretary to the Government of Bengal, Revenue Department, dated Fort William, 27 September 1848.

Sir,

WITH reference to Under Secretary Mr. Dalrymple's letter, No. 97, dated the 9th of February last, transmitting copy of a despatch, No. 9, from the Honourable Court of Directors, dated the 10th of November preceding, together with 10 copies of Dr. Royle's memorandum received therewith, and requesting the Board to take measures to obtain the information required on the several points indicated in the second paragraph of the Court's despatch, and to submit the same in such form as may appear best calculated to meet the wishes of the Honourable Court, I am now directed by the Sudder Board of Revenue to request that you will lay before the Right Honourable the Governor the accompanying statement, exhibiting, in an abstract form, the replies of the local officers to the several queries put by the Honourable Court.

Mis. Dept.
Present: *J. Lewis*
and *E. M. Gordon*,
Esqs.

296—Sess. 2.

P

2. His

His Lordship will be aware from the circumstances reported in my letter, No. 219, dated the 28th July last, that it is extremely difficult for Collectors in the Lower Provinces to collect statistical information of the present description with any great degree of completeness or exactitude, but that now furnished may, they think, be relied on as far as it goes, excepting perhaps the replies to the last query relative to the quantity of land under cotton cultivation, and the extent to which that cultivation might be increased, on which points they doubt if the local officers have the means of arriving at anything like a true estimate.

3. Copies of the letters specified in the annexed list, selected from the correspondence received, are also added, as containing particulars and remarks which may be thought to be of use.

4. The latest local return was received on the 18th instant.

Sudder Board of Revenue.

I have, &c.
(signed) G. Plowden, Secretary.

LIST OF CORRESPONDENCE.

Letter of the Commissioner of Dacca, No. 179, dated the 5th instant.

Letter of the Commissioner of Assam, dated the 22d of May, No. 89,

Letter of the Officiating Collector of Goalparrah, No. 99, dated the 13th of May.

A note by the Collector of Chittagong, dated 31st March 1845.

(No. 179, of 1848.)

From J. Dunbar, Esq., Commissioner of Dacca, to the Sudder Board of Revenue,
Fort William.

Gentlemen,

I HAVE the honour to acknowledge the receipt of your Board's circular, No. 4, dated the 12th February last, with its enclosures, and in accordance with the instructions contained in the second paragraph, to transmit herewith a statement exhibiting the replies of the Collectors in this division to the several questions put by the Honourable the Court of Directors in regard to Indian cotton, with such general remarks on the subject as they have been enabled to offer.

Dacca.

2. The former civil surgeon of this station, Mr. James Taylor, in a statistical account of the district of Dacca, published some years ago, supplied some useful and interesting information respecting the cotton of this district, from which the Collector of Dacca has furnished the following extracts as bearing upon the subject of the capabilities of the district for producing a superior description of cotton. Mr. Taylor observes, "The material of which the fine Dacca muslins are made is entirely the produce of the Dacca district. The plant is an annual one, and attains a height of about five feet. It is described by Roxburgh as a variety of the *Gossypium herbaceum*, and is said to differ from the common cotton plant of Bengal in the following particulars: 1st. The branches are more erect, with fewer branches, and the lobes of the leaves more pointed. 2d. The whole of the plant is tinged of a reddish colour, even the petals and nerves of the leaves are less pubescent. 3d. The peduncles which support the flowers are longer, and the exterior margins of the petals are tinged with red. 4th. The staple of the cotton is longer, much finer, and softer. This is the Desee, or indigenous cotton of the district, which has been cultivated in the Northern Division from time immemorial. The cotton of the present day, it is affirmed by the natives, is inferior to what it formerly was; the crops are less abundant, it is said, and the fibres, though apparently equally fine and soft, are shorter and more firmly adherent to the seed than the produce of former years. The Dacca cotton, however, notwithstanding the deterioration imputed to it, still ranks as an article of finer quality than the produce of other parts of Bengal, or of the Western Provinces. Of late years small quantities of it have occasionally been exported to the Calcutta bazars, where it always sells at a higher price than cotton imported from other parts of the country. Two crops are raised in the district; they are gathered in April and September, but the first yields the finest produce, and is the one that is chiefly cultivated. The cotton plant is liable to injury from hailstorms, heavy rains, and caterpillars; it impoverishes the soil, and the same field never produces successively more than two crops of good cotton. Formerly the ground for cotton was allowed to lie fallow every fourth year, and it appears to be owing to the neglect of this circumstance in the present day that the produce is now inferior in quality to that of former times. A good crop is estimated at eight maunds* per beegah. The average proportion of seeds to wool

* The collector remarks: "Mr. Taylor estimates the produce of a beegah much higher than I have stated it to be, but it is probable he meant a larger beegah than that in common use in Bengal, as from all the information which I can obtain the produce of a Bengal beegah does not exceed two maunds."

wool is about three quarters, or 32 seers of the former in one maund, or 40 seers of the uncleaned cotton. The Northern Division of the district produces the best cotton, and in the situation, especially that portion of it bordering upon the Megna and Berhampooter, in Sonergong, Capassia, Toke, and Junglebarree, in which this article was chiefly cultivated in former times. The soil here, it may be remarked, possesses the different constituents that are supposed to be essentially necessary to the formation of good cotton ground in America, and it is perhaps to this circumstance that the superiority of the Dacca cotton over that grown in other parts of Bengal is to be attributed."

3d. The officiating superintendent of Cachar offers the following remarks on the cultivation of cotton in the province under his charge: "The Nagah and Kookee tribes who inhabit the hills in different parts of the district, are the only people who cultivate cotton in Cachar. I do not believe that there is one acre of land under cotton cultivation in the plains, or cultivated by the inhabitants of the plains. These hill people are very rude farmers; they first cut down all jungle on the side of a hill, then burn it; that is all the preparation the land gets; when the season comes round, they sow their seeds, three or four different kinds, all in the same spot, cotton, rice, pepper, &c. The first ripe is the first cut. They seldom cultivate the same hill more than two seasons running; within the last year some 2,000 Kookees have taken up their abode in the district; they will all cultivate cotton, for which reason I am of opinion that the quantity cultivated next year will be double what it has been this. Both Kookees and Nagahs are poor, and I fancy idle; they only just cultivate enough to keep themselves from want, they bring their produce to the different marts, and barter away the greater part of it for one-half its value.

Cachar.

"During the current year there were about 225 kulbas or 2,700 kears of land upon which cotton was cultivated, yielding from 2½ to 3 maunds the kear, or say, 7,000 maunds the whole produce of the district; of which from 4,000 to 5,000 maunds have been sent out of the district.

"Owing to the careless way of cultivating cotton in Cachar, the colour of it is not good, not so white as it ought to be, but it is very strong, and cloth made of it is much more durable than other cloths. In order to give you an idea of the proportion of seed to cotton, I had one seer of 90 tolahs kapass weighed in my presence. I had it cleaned with the churkee; the result was as follows; viz., of seed there were 51 tolahs, cotton 37 tolahs, and dirt, &c. 2 tolahs. One maund of kapass (90 tolahs to the seer) is equal to 90 lbs. The prime cost of which would be, say Rs. 3. 4., the cleaning 12 annas. The result would be 37 lbs. of cleaned cotton for 4 rupees; the expenses attending on the conveyance of which to Calcutta, together with the charge at transit ghaut, would be about 5 annas 4 pie. From which I calculate 37 lbs. of cotton, freed from seed, might be delivered in Calcutta, all expenses paid, for Rs. 4. 5. 4., which in English money would be equal to 8s. 8d., or about 2½d. per pound."

4th. The other revenue officers of this division have made no observations on the cultivation of cotton in their respective districts, beyond what are to be found embodied in their replies to the questions of the Honourable Court.

5th. Mr. Allen, the officiating collector of Mymensing, is the only one who has entered into a discussion of the probability of the Indian cotton entering into successful competition with the produce of America in the English market. He does so in the following terms: "I think that India will never be able successfully to compete with America in the production of cotton for the English market; a party in England seems to hold the contrary opinion; it may be pampered by protection, by experimental cotton farms, by the ingenuity of railway speculators, and the like; but in the end I am persuaded that the incapacity of India will be apparent and acknowledged. There is so much against India; there is so much in favour of America. In this ancient and populous country, where land is valuable and rents high, where agricultural science is almost unknown, and the want of skill, energy and enterprise of the agricultural population is proverbial, where the produce is so inferior, and the cost of transportation necessarily so high, competition with America seems a hopeless task. In America the produce is so very superior, the cultivation is carried on with every agricultural improvement upon a vast, rich, and perhaps rent-free virgin soil, by the most hardy, energetic, persevering, slave-driving race in the world. The advantage of the geographical position of America need not be insisted on, it is so apparent. Can the Indian cotton grower reasonably hope for success against such odds as these?

"It has been lately remarked by a very able and acute writer upon the cotton question, that although many of the products of India, such as sugar, indigo, lacdye, raw silk, &c., have been brought with a profit into the markets of Europe, by European skill and enterprise, the British capitalist has never been tempted into the culture of cotton; it is well known what vast sums have been lavished on other agricultural and manufacturing speculations in India; it has been urged that had there been a moderate chance of success, cotton would have been tried as well as other things. The spirit of speculation in India, though not always honest, has been ever rampant; Indian speculators have dabbled in tea, timber, rice, indigo, rum, and other very numerous et ceteras, and why have they all unanimously left the culture of cotton alone? I have never heard that even the Calcutta Union Bank exercised its ingenuity upon a cotton plantation. When the cotton question comes to be

I.
Bengal and
North Western
Provinces.

discussed, this fact must be considered and inquired into. My own impression is, that, under the present aspect of affairs, no human means, not all the strength and wisdom of a powerful and enlightened Government, will enable India to meet America in the English cotton market with any prospect of successful competition."

6th. From the local returns then it would appear that the only two districts within this division, in which cotton can be said to be grown for the market, are Cachar and Dacca. The former in an agricultural point of view may be regarded as quite a new province, the resources and capabilities of which are just only beginning to be developed. The cotton cultivation is at present chiefly confined to the slopes of the hills; but the climate is in the main so similar to that of Eastern Bengal generally, that I see no reason why the plant should not thrive in the plains. I do not say that I have any good hope of Cachar ever yielding cotton to such an extent, or of such a quality, as to give it a permanent place in the export market; yet small and thinly inhabited as the province is, it seems desirable to afford every possible encouragement to the cultivation of cotton. If the cultivators can dispose of their produce in the country markets to advantage, they will find in it, at the least, one source of increasing their means of subsistence; and if in the long run it should be found to succeed so far as to make it worth while to export the produce, so much the better. I shall accordingly take an early opportunity of sending a small quantity of cotton seeds, both foreign and indigenous, to the superintendent of Cachar, with a view to its distribution amongst the ryots.

7th. In the district of Dacca there can be no question, as Mr. Tottenham remarks, that cotton is now much less extensively cultivated than it used to be. The mere knowledge of the fact, however, that the cultivation was at one time considerable, is surely sufficient to warrant the belief that proper encouragement is alone wanting to restore it. The cotton grown in some parts of this district would appear to be, upon the whole, a finer and more delicate product than any other cotton in the world. From this circumstance, and from the wonderful fineness of touch in the hand of the females employed in spinning it, arose that superiority in the Dacca muslins, which for a long time seemed to defy competition, and which even now perhaps leaves every other fabric behind in fineness and delicacy of texture. The call for such cloths, however, has in a great measure passed away, and English manufactures of a description suited to the wants of every class can be brought into the Indian market at a cost so moderate, that the Dacca muslins, the produce of mere manual labour, cannot hold their place against them. This has, as a matter of course, had the effect of greatly reducing the cultivation of cotton in the district, yet its capabilities in point of soil and climate are just what they were, and it is upon this that we ground our hopes of being able to introduce the cultivation of other cottons, such as Patna, American, and Bourbon, of a hardier nature than the indigenous plant, and yielding wool of a longer staple, and consequently better fitted for the English market.

8th. Mr. Allen, the officiating collector of Mymensing, it will be observed, has taken rather a gloomy view of the subject; he considers it hopeless, in fact, that India should ever be able to compete with America in cotton. Whatever doubts the absence of success heretofore may sometimes force upon us, I am altogether opposed to our taking the inferiority of India for granted. There is no commercial object connected with our Indian possessions of greater national importance than the culture of cotton, so as to render it a productive article of export to Europe, and I am clearly of opinion that we should not stop till we have placed the possibility or impossibility of giving the English manufacturers the raw material of a quality equal to the American, and at the same or a less cost, beyond question. I do not think that we have by any means yet come to that point at which it would be advisable or expedient to hold hard; our experiments here are but on a small scale, compared with what has been done and is still doing in the north-west, and at the other Presidencies, but I am keen for going on with them, knowing as I do, that for centuries past the soil and climate of this district have produced cotton from which the most beautiful fabrics ever seen have been spun; and believing, as I do, that great and important ends are seldom attained without patient, long-continued and laborious application.

9th. If we can but succeed in growing good cotton in this district, I should have no fear of our being able to deliver it in the home market at a cost sufficiently moderate to enable it to compete with that from any other part of the world. Land here is abundantly plenty, labour is very cheap, and we have an advantage of the utmost importance in the great facility of intercourse by water. From what is stated in the quotation which Dr. Royle gives from the letter of the President of the Manchester Commercial Association, it would appear that the Indian cotton sent home is found to be greatly deteriorated from the system of conveyance by bullocks, which no doubt exposes it much to dirt and adulteration. This is an evil to which we should be in no degree subject here, as there is no part of the district from which cotton might not be brought away without further exposure than that which would be incurred in carrying it from the ryots' houses to the boat; probably a distance of less than a mile. Mr. Turner's letter contains one excellent piece of advice, to which I think all who are interested in the cultivation of cotton in India would do well to attend. In districts in which the American plant will not thrive, he says, "encourage the growth of the best cotton which will grow." This is the principle upon which I have enjoined Mr. Price to proceed. Nothing disgusts the ryots more readily than being kept, year after year, to the culture of an unsuccessful crop; even if they are not themselves subjected to loss by
the

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 117

the result, they lose heart about it, and become careless; but give them a cultivation which thrives under their hands, and let them see that it only requires to be followed up to pay them well for their labour, and we may rely upon it, it will be taken up with that avidity which self-interest and the prospect of gain never fail to engender.

I.
Bengal and
North Western
Provinces.

Commissioner's Office, Dacca Division,
Dacca, 5 September 1848.

I have, &c.
(signed) J. Dunbar,
Commissioner of Revenue.

Sudder Board of Revenue, Fort William,
27 September 1848.

(True copy.)
(signed) Geo. Plowden, Secretary.

(True copy.)
(signed) W. Seton Karr,
Under Secretary to Govt., Bengal.

(No. 89.)

From Major F. Jenkins, Commissioner of Revenue, Assam, to the Board of Revenue,
Fort William, dated Gowhatty, 22 May 1848.

Gentlemen,

WITH advertence to your circular orders No. 4, under date the 21st February, I have the honour to annex copies of letters, as below,* from the collectors of this division, for the Board's information relative to the cotton cultivated in this province.

2d. In this division cotton forms the staple article of export, but it is principally cultivated by the Garrows in their hills; though there is very much high land in the division under the hills which seems well adapted for cotton, as pointed out by the collector.

Gowalparah.

Almost all the cotton is exported uncleaned, and chiefly in a dirty condition, being sold at two and a half to three rupees a maund to the small traders, who supply the neighbouring zillahs of Bengal.

The export probably exceeds 100,000 maunds a year, and I believe the cultivation could be very greatly extended; that is, there is favourable ground totally unoccupied for twenty times that quantity of cotton; and any circumstances which caused a very trifling rise in the price of the wool would, I imagine, be attended with a great increase in the cultivation of the cotton-plant.

The quality of the cotton is very inferior with reference to its applicability to machinery; it is coarse and short-stapled, but it is very strong, and the plant is very productive.

Captain Reynolds proposes a small experimental farm on the hill at Gowalparah; but this, applying only convict labour, would be on so small a scale, that I should not imagine it would be of much use. There is a vast quantity of available good cotton land close to Gowalparah, however, should it be considered expedient to extend the small experimental cultivation Captain Reynolds alludes to.

3d. In this division little cotton is cultivated, but there is abundance of favourable hill land for cotton on the hills which form the southern boundary of Kamroop.

Kamroop.

4th. In this division the little cotton cultivated is almost wholly consumed in domestic manufactures, but the extent of available high plains, which I imagine, are well adapted for the superior cultivation of foreign cottons is very large.

Durrung.

5th. Cotton is grown largely in parts of this division, and much is imported from the Nagah hills, on the southern frontier; so that, after supplying the domestic demand, a considerable quantity is exported. The quality of the cotton is much the same as that of the Garrow Hills, but it fetches rather a higher price in the common mart of both, Gowalparah. The hill land fit and available for cotton is of prodigious extent, and I think that grown in the mountainous tract of northern Cachar is, in the weight of the pods and the size of the plants, superior to any I have seen elsewhere.

Nowgong.

6th. Almost all the cotton which is exported from this division is produced in the Nagah Hills, where there is the same favourable ground for the culture of this plant as in the preceding division.

Seebasgur.

7th. The cotton of this division is decidedly superior to that of the other divisions, as it freely fetches at least one rupee a maund higher price at Gowalparah. This may be owing to the different kind of land on which it is grown, for here the plant is solely raised on the high

Luckimpore.

* Gowalparah, No. 99, 13 May; Kamroop, No. 27, 20 May; Durrung, No. 24, 29 April; Nowgong, No. 11, 9 May; Seebasgur, No. 4, 6 May; Luckimpore, No. 80, 9 April.

I.
Bengal and
North Western
Provinces.

high flat plains which form so large a portion of the country between the Dehing River, the Burrumpootur, and the Eastern Hills.

I conceive these high plains are as well adapted to the growth of cotton as any in India, and if any experimental farm for the growth of this article should be allowed to be tried in Assam, I should propose its being established in Muttuck. The lands are high and well-drained, but the climate is cool and wet; in these respects resembling much, I imagine, the climate of Combatore and Tinnively, districts about the wettest in India, which are so favourably noticed in Dr. Royle's report to the Honourable Court of Directors for the growth of American cottons; and it may be worthy of notice, that a small quantity of cotton raised in Muttuck from American seeds, but without any care in the cultivation, was particularly beautiful in its colour, and of fine silky feel, and long in the fibre.

I am fully persuaded that good cotton could be grown in the Muttuck districts from the superior indigenous seeds and the acclimatised American seeds, but the great drawbacks to any experiments that have hitherto been made to introduce seeds from other countries, is the state of the seeds by the time they reach Assam, and the unfavourable season at which they have been received. The consequences have been great disappointment on the part of the natives who have tried the seeds, from their universal failure, and their imbibing a notion that only the seeds of the country can be grown on their lands. By sending, however, the seeds now by the steamer, much of the former bad results would be obviated.

I would beg to call the notice of Government to the means we have of trying an experiment in the cultivation of cotton in Muttuck, at a very trifling expense. I allude to the employment of the superintendent of the Government tea plantations for the charge of the cotton farm. There are excellent lands, the property of Government, in the immediate vicinity of the tea barrus; and thus, as by putting the cultivation under Mr. Lumpyong, the expense of superintendence would be saved, and the sole expense would be the labour of cattle and ryuts. Efficient trial of all the kinds of seeds procurable could be made at so small a cost, that I would beg to call the favourable notice of the Board to this subject, and to request their recommendation to the Right Honourable the Governor of an experimental farm, however small at first, being established in the Muttuck division, under the control of the superintendent of the tea plantations.

This farm would by no means interfere with the tea plantations, but rather would assist them, and cheapen all operations, as the coolies would be retained in more permanent employ, and the fixed establishment would be available for overseeing and directing the cotton cultivation.

I have, &c.
(signed) *F. Jenkins*,
Commissioner of Revenue.

Revenue Commissioner's Office, Assam,
22 May 1848.

Sudder Board of Revenue, Fort William,
27 September 1848.

(True copy.)

(signed) *Geo. Plowden*, Secretary.

(True copy.)

(signed) *W. Seton Karr*,
Under Secretary to Government, Bengal.

(No. 99.)

From Captain *C. S. Reynolds*, Officiating Collector, Zillah Gowalparra, to Major *F. Jenkins*,
Commissioner of Revenue, Assam; dated, Gowalparrah, 13 May 1848.

Sir,

I HAVE the honour to acknowledge the receipt of your letter, No. 90, of the 16th March 1848, enclosing a circular, No. 4, of the 21st February last, from the Secretary to the Sudder Board of Revenue, giving cover to the copy of a despatch from the Honourable Court of Directors, dated the 10th November last, relative to the introduction of American cotton into different parts of India, the improvement of the indigenous cotton, and the probability of Indian cotton entering into successful competition with the produce of America in the English market, and I have now the honour, in obedience to the instructions contained in the 2d paragraph, to submit my replies to the questions therein furnished.

Question 1. What is the price of cotton, freed from seed, at the principal mart or marts in your district?

Answer. The principal market in this district is Gowalparah, and selling price of cotton cleaned, of all descriptions, Garrow and Assamese, is *Rs. 8. 8.* to 9 rupees per mauud of 80 tolas.

2 At what price does the ryot sell his cotton, cleaned or uncleaned, and with or without advances?

No advances are at present made by the merchants to the Garrow cultivators of cotton, and the rate at which it is generally disposed of by them at the Garrow Hauts is from 2 rupees to *Rs. 2. 4.* per mauud uncleaned; the little brought down cleaned, averaging perhaps

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 119

I.
Bengal and
North Western
Provinces.

perhaps 1,000 maunds annually, fetches at the rate of Rs. 4. 12. to 5 rupees per maund at the haunts under the hills.

3. What is the expense of cleaning cotton by the churka or foot-roller, or by any other method which may be in use?

The expense of cleaning cotton by churka, the only instrument, is about 12 annas per maund. Garrow cotton contains equal portions of seed and cotton, while the Upper Assam only yields 16 seers per maund of the latter, the remainder being all seed.

4. What are the expenses of conveying cotton to the nearest market?

The cost of transit to Calcutta from Gowalparrah is about 4 annas per maund by country boats. By steam the cost would be—

5. What is the average produce of cotton per beegah or acre?

About 3 to 3½ maunds per beegah of 16,00 square yards, or 40 x 40 yards.

6. What is the quantity of land under cultivation with cotton, and to what extent is it probable that the cultivation could be carried, in the event of any increased demand?

I have no means of ascertaining the quantity of land under cultivation correctly, as the whole of the cotton sold at the haunts is the produce of the Garrow country, which is unsurveyed, and with the chiefs we have no regular settlement.

By referring, however, to the returns of Sayerat collections for 1842, the quantity of cotton brought down that year appears to have been about 45,000 maunds, which if taken at the above average produce will give the quantity of land under cultivation as 15,000 beegahs, but I believe this is not even an approximation to the real amount, for it is well known that the cotton brought down was much under-rated by the native officials in charge of the Sayerat duties for their own benefit, but as it is impossible to obtain more correct data at present, it is useful to know that the quantity of land under cotton cultivation is certainly not less than what I have stated. The cultivation may be increased to any amount that the industry of the people will allow and increased demand call for.

2d. Cotton is but triflingly cultivated by the inhabitants of this district; the Mechs, Hagons, Robahs, &c., who occupy the off-shoots of the Garrow Hills, generally plant sufficient for their own use, but no more, and the Garrow Hills, which form the southern boundary of this district, inhabited by a hardy and industrious race, produce the whole quantity sold at the haunts; cotton may be said to form the staple produce of these hills, which are too poor in soil to yield sufficient grain for the wants of the population. The Garrows are therefore compelled to cultivate a crop adapted to the soil and climate, and which they can at all times readily barter for food and other requisites of the plains. The improvement of the cultivation and introduction of a superior species of cotton to that at present sown, is therefore of the first and greatest importance; but the superstition of the Garrows presents a formidable obstacle to this most desirable object, as they refuse to plant any other seed than their own, lest they should incur the wrath of their gods, and their lands be cursed with infertility. The only way we can hope to overcome these prejudices is by introducing amongst the Garrows and Robas of the plains a better species of cotton. These people are less superstitious than their brethren of the hills, and might be persuaded to cultivate it, and it is to be hoped, that as the hill people saw no harm accrue to them from the cultivation, they would gradually take to it.

3d. The zemindars of the district however show so little desire to improve the condition of their ryots, or develop the resources of their lands, that the Collector can scarcely calculate on any assistance from them in carrying out schemes of improvement connected with the district itself, much less those for the improvement of the industrious race that inhabit the hills to the south. If, however, the zemindarie of Hubraghat, which sooner or later must be brought to the hammer by the creditors of the present proprietor, was purchased by Government, and brought under special management, we might, by means of the Garrows who hold lakheraj lands in this pergunnah, introduce amongst them, and afterwards amongst the hill Garrows, not only a superior kind of cotton, which article forms the staple produce of their country, but also many other improvements which would lead to the gradual civilization of this neglected but industrious race, who now know no art or manufacture, even of the rudest kind.

4th. It is only through the medium of the Garrows and Robahs of the plains we can hope to do anything with this people, and as the zemindars will give us no assistance with them, we never can expect to do so, unless we get some of the lands under the hills into our own management.

5th. Perhaps no portion of Assam presents so many facilities for the cultivation of cotton as the high lands found throughout this district, and the Garrow hills to the south of it. The climate is congenial to the growth; the lands are above inundations. The soil is good, and throws fair crops, and there is abundance, fit to produce any quantity of cotton that may be required, and the industry of the people will permit; the facilities of carriage are perhaps unequalled in any part of India, as all the Garrow markets are situated on navigable rivers, tributaries of the Burhampooter, and the cotton is cheaply and easily transmitted in small boats to the ghauts on the latter river, from whence it is re-shipped for other markets. The expense therefore is trifling, but what is of greater importance, the exporter is able to send the cotton down in better order, and cleaner, than he could by land carriage.

I.
Bengal and
North Western
Provinces.

6. From the information of the merchants and others of this place, I believe that little or no cotton finds its way below Serajgunge, if even so far as that; the whole quantity brought into the market here is purchased by some merchants of Koorygong Rungpoor, who transmit it to their correspondents at that place, where it is disposed of to the weavers and others of that district. The whole quantity brought also to the Garrow hauts is purchased and disposed of in the same manner. The cloths wove from the cotton are, I believe, of a coarse description.

7th. An opinion, whether American or any other cotton may or may not be successfully introduced into this district, can only be adduced from experiments, and, as far as I am aware, none have ever been made; but as it appears an object of the first importance that some endeavours should be made to introduce a better article amongst the Garrows than that they at present grow, I would beg to suggest that a small portion of land on the Gowalparah hill should be brought under cultivation with convict labour, and every sort of cotton procurable, and worth growing, should be tried. The climate and soil of Gowalparah assimilates so closely to that of the Garrow hills, that I should think any vegetable production which would succeed on the one, would on the other; at the same time seed might be introduced amongst the Robahs, Mechs, &c., but little dependence could be placed on their reports, and the only satisfactory method of solving the question is by actual experiment, and should my proposal meet with approval, I shall be most happy to give it my very best attention.

8th. In conclusion, I beg to say, that if it was found impossible to introduce a better sort of cotton amongst the Garrows, or that it would not succeed, it might still be useful to encourage the extension of the Garrow cultivation, as it would supply the place of better cotton grown in other districts, which might be exported. I am, however, very sanguine, that in time we may, by perseverance and encouragement, introduce a much better species of cotton into the Garrow hills than produced at present.

I have, &c.
(signed) C. S. Reynolds,
Officiating Collector.

Sudder Board of Revenue, Fort William,
27 September 1848.

(True copy.)

(signed) George Plowden, Secretary.

(True copy.)

(signed) W. Seton Karr,
Under Secretary to the Govt. of Bengal.

NOTE on the Cotton of the Chittagong District.

FROM an early period, for the last 70 years, and I know not how long before, cotton has been an established product of this district. In the early times it consisted, generally speaking, of two sorts, that grown in the frontier hills and that grown in the plains. The latter sort would appear to have been encouraged by the local demand, arising from the manufacture of cotton stuffs in the Government factory, but since this was abolished, the cultivation of cotton in the interior of the district seems to have been discontinued; at all events, the quantity now grown is very limited, and the hill cotton only, from the extent to which it is cultivated and the trade which it fosters, is worthy of notice.

Cotton is the grand staple of the Joomeas, or hill people, throughout the extent of our long frontier, from the River Fenny, which separates Chittagong from Tipperah, down to Teknaaf, the Arracan border. They are but rude farmers. A hill side is cleared from the surface wood; the land is neither ploughed nor dug, and with the commencement of the first rains the seed is sown. Rice, gourds, pepper, cotton, are all dropped in the same hole. First ripened is first reaped. The cotton is gathered in the months of October, November and December. The same hill is used only for two or three years, when it is abandoned, and a new clearance made.

I subjoin an estimate of the quantity of cotton grown during the last two years, giving also the localities, though perhaps it might be sufficient to state the gross result:—

	Crop of 1844-45.	Price.	Crop of 1843-44.	Price.
		Rs. a.		Rs. a.
Futtikcherree	8,000 maunds	2 8	10,000 maunds	2 -
Rangooneah	15,384 "	3 4	22,222 "	2 4
Satkuneah	14,285 "	3 8	22,222 "	2 4
Chukera	14,000 "	2 8	15,555 "	2 4
Ramoo	8,333 "	3 -	11,111 "	2 4
Teknaaf	10,000 "	2 8	12,500 "	2 -
	<u>70,002</u>		<u>93,610</u>	

This

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 121

This estimate is based, not upon a calculation of the lands cultivated or the cotton picked (which under general circumstances is impossible), but upon the traffic after it has left the hands of the Joomeas, and the capital turned over by the dealers interested in the trade.

I.
Bengal and
North Western
Provinces.

The estimate is made of the uncleaned cotton; commonly two-thirds go to seed, and one-third is yielded of clean cotton or rooe; but in some sites, chiefly, I am informed, where the soil is better, the cotton is not only of a better quality, but the bulk and weight of seeds diminish, while the clean cotton increases. In Satkunneeah as much as two-fifths of clean cotton is picked. I observe, from specimens now before me, that the staple of the Satkunneeah cotton is finer and longer; but, as I have said, this is ascribed to the soil, and not to a variety of the plant. There are always two, often three, parties engaged in the transport and purchase of the cotton between the cultivators and its final export from the district. Beoparees from the plains go into the hills to purchase it, either as agents or as principals. It is then stored in golahs, and from these golahs it is bought by outside merchants residing at Narangunge (Dacca) or other towns in eastern Bengal.

The prices which I have given above are the average of the first purchase made by the Beoparees. Between them and the Joomeas others often intervene, and of course intercept a portion of the profit. In reselling the cotton for export, the Beoparees make at least one rupee per maund. This year, in Satkunneeah, the durung or golah price is Rs. 5. 8., which is an advance of two rupees above the prime cost. But it is not in this only that the profit of the home merchant consists. The Joomeas, however crafty in matters within their own cognizance and under their own control, are beaten in barter. It is not to be supposed that they get the worth of their goods, but they get less than what a knowledge of the weights and prices of the plains would enable them to secure. Rude scales are used, and heavy weights, 50 or 60 seers to the maund.

Besides the cotton carried out of the district, to which my estimate is chiefly confined, a good deal is left for home consumption. Perhaps the ordinary crop of the district may be expressed at 75,000 maunds seed cotton, or 25,000 maunds cleaned cotton; this would be two millions of pounds.

To the home dealer the purchase of cotton involves an outlay of about 20,00,000 rupees; to the exporters about 3,00,000 rupees; but much of these sums may be supposed to be one capital twice used.

At the rate of Rs. 2. 8. a maund for seed cotton, the equivalent price in English money would be 2½ d. the pound. One maund of seed cotton would give, say 12½ seers, or 25 lbs. rooe for Rs. 2. 8., say 5 s., i. e. 5 lbs. to the shilling. This may be taken with sufficient accuracy to show at what price the cultivators can afford to grow the staple. Some years back much higher prices ruled; the fall is said to be owing to the greater importation and use among native weavers of English thread. But even now the common retail price of cotton, current in a country where the staple is indigenous, compared with prices in England, seems extremely high; in the bazars here it sells at three seers to the rupee, or four annas to the pound.

Chittagong, 31 March 1845.

(Copy.)

(signed) A. Sconce, Collector.

(A true copy.)

(signed) R. Frank, Head Clerk.

Sudder Board of Revenue, Fort William,
27 September 1848.

(True copy.)

(signed) G. Plowden, Secretary.

(A true copy.)

(signed) W. Seton Karr.
Under Sec. to the Govt. of Bengal.

ABSTRACT of the REPLIES of the Local Authorities to the Board's Circular of the
of Cotton in India, as required by the

DIVISIONS and DISTRICTS.	1. What is the Price of Cotton, freed from Seed, at the prin- cipal Mart or Marts in your District?	2. At what Price does the Ryot sell his Cotton, cleaned or uncleaned, and with or with- out Advances?	3. What is the Expense of clean- ing Cotton by the Churka or Foot-roller, or by any other method which may be in use?
MOORSHEDABAD:			
Rajshahye - -	The usual price of cotton freed from the seed is for first quality eight to nine rupees per maund of 61 lbs. avoirdupois, and second quality six to seven rupees.	The quantity of cotton grown in this district is extremely small, and is generally consumed by the producer, but when any pressing necessity compels the grower to sell it in a raw state, it usually fetches from 1 to 1½ anna per seer of 60 tolahs.	The expense of cleaning cotton is said to be about one rupee per maund by the churka.
Beerbhoom - -	Cotton freed from seed is sold at about 10 rupees per maund; that with the seed in it at about three rupees.	The ryot cultivates at his own risk, and no advances are made him; he disposes of his cotton as per preceding column, and his profits are about 8 to 12 annas per beegah, the expenses of cultivation and rent of land, &c., being about nine rupees per beegah.	Cotton is cleaned by the common churka, and the expense is from six to ten annas per maund. The work is performed by the women of the family, each woman cleaning about two seers in half a day.
Bograh - - -	Not stated - - -	Not stated - - -	Not stated - - -
Rungpore - -	The price varies in different parts of the district. In Pergunnah Bahirbund, &c., it is from 6½ to 7 rupees per maund of 60 sa. weight to the seer for cotton freed from the seed, and uncleaned at Rs. 2. 12.; in Coondy, good cotton freed from the seed sells at 2½ seers per rupee, of 90 sa. weight to the seer; in other parts the price is 10 to 11 rupees per maund of 90 sa. weight to the seer, and sometimes even as high as 15 rupees, according to quality.	There is no cotton cultivation at present in the district. The ryots retail the article which is supplied from other districts.	The only method of cleaning cotton in this district is by the churka; the expense is from 1 to 1½ rupees per maund.
Pubna - - -	Cotton is not grown in this district, the soil being unfavourable to its cultivation.		
Moorshedabad -	The principal cotton mart in this district is Jeagunge, where cotton freed from seed sells at from eight rupees to Rs. 10. 12. per maund, according to quality. <u>The cotton is brought to this mart from Mirzapore,</u> and thence finds its way to every part of the district for local consumption.	In Noorye thanah there are a few acres of land under cotton cultivation by a Hill tribe called Sowntat; the produce is of the worst sort, and is sold by the cultivators in an unclean state to their neighbours at the rate of 16 seers per rupee, as required for local consumption.	The only cotton produced in the district is in the Noorye thanah; it is never cleaned by the cultivators, but sold in its raw state. The purchasers clean it by means of the churka at a cost of four annas per maund.

21st February 1848, calling for certain Information relative to the Cultivation, &c.,
Honourable the Court of Directors.

4. What are the Expenses of conveying Cotton to the nearest Port for Shipment?	5. What is the average Produce of Cotton per Beegah or Acre?	6. What is the quantity of Land under Cultivation with Cotton, and to what extent is it probable that the Cultivation could be carried in the event of an increased demand?	ABSTRACT of COMMISSIONER'S REMARKS.
<p>The expense of conveyance to Calcutta is about 1½ anna per maund by water; land carriage would hardly be necessary at all.</p> <p>The whole of the produce is used in the district.</p>	<p>The produce of a beegah, when freed from seed, is said to range from 2 maunds to 2 maunds and 10 seers of 61 lbs. avoirdupois; the beegah being equal to one rood, 12 perches, and 27 yards.</p> <p>A beegah will produce from 2½ to 3 maunds of 40 seers; three beegahs are about equal to one English acre.</p>	<p>The cultivation does not exceed 2,000 beegahs, and the produce is insufficient for the consumption of the inhabitants of the district, to supply whose wants large quantities of raw cotton are imported from the North Western Provinces. There is very little prospect of the cultivation being extended.</p> <p>The cultivation consists of about 1,500 beegahs, and might be increased to five times that quantity. It requires the best description of land where the means of irrigation are handy. The cotton grown is of the indigenous sorts.</p>	<p>The Commissioner says that the only district in this division, the soil of which is favourable to the cultivation of cotton, is Rungpore; where Mr. Terry, an American cotton planter, was some time employed conducting experiments at the cost of Government.</p>
<p>Not stated - - -</p>	<p>Unknown - - -</p>	<p>The cultivation of cotton is exceedingly trifling, and it is grown thinly scattered among pepper, turmeric, &c., for domestic purposes only; the extent to which it could be grown is not capable of estimation.</p>	
<p>As no cotton is exported, the expense of conveyance cannot be computed.</p>	<p>Cotton is not cultivated in this district.</p>	<p>There is no cultivation, but if introduced, it might be carried to a considerable extent. On the Carjeehaut estate the zemindar says he has about 1,000 beegahs of land available for the purpose; and the experiments under Mr. Terry tended to show that some parts of the district are favourable to the cultivation of the plant.</p>	
<p>The expense of conveying cotton from Jeagunge to Calcutta is 20 rupees per 100 maunds; the maund consists of 40 seers of 80 tolahs each.</p>	<p>The darogah of Noorye estimates the average produce to be 15 seers of 80 tolah weight per beegah, equal to one-third of an English acre.</p>	<p>The quantity of land in cultivation is about 500 or 600 beegahs, and 100 or 200 beegahs further are available in the Noorye thanah for the cultivation. The article is produced in no other part of the district.</p>	

ABSTRACT of the Replies of the Local Authorities to the Board's Circular of 21 February 1848,

DIVISIONS and DISTRICTS.	1. What is the Price of Cotton, freed from Seed, at the prin- cipal Mart or Marts in your District?	2. At what Price does the Ryot sell his Cotton, cleaned or uncleaned, and with or with- out Advances?	3. What is the Expense of clean- ing Cotton by the Churka or Foot-roller, or by any other method which may be in use?
PATNA:			
Patna - - -	The price of cotton of indi- genous growth is about nine ru- pees per sa. maund. The im- ported cotton usually sells at about half a rupee per maund less on account of adultera- tions and injury occasioned by transit.	Cotton is cultivated on the best village lands, affording fa- cilities for irrigation and ma- nuring. Advances are very seldom made, and the ryot sells his produce at the rate given in the preceding column.	Four annas per sa. maund of 40 pucca seers, the seer be- ing equal to 80 sicca rupees weight.
Behar - - -	Cotton imported from the North-west Provinces is sold at 11 rupees per maund.	The ryots sell their unclean cotton at four rupees per maund without advances. The indi- genous cotton is superior to that usually imported.	The common churka is used. The men who employ them- selves in cleaning cotton get three seers of paddy per diem, and clean about two seers of cotton in a day.
Sarun - - -	At Revelgunge the price of cotton averages from 9 to 10 rupees per maund.	They sell clean cotton at about 9½ rupees per maund, and the unclean cotton at 9 ru- pees per maund, without ad- vances.	The churka is generally used, and the expense of cleaning is about two pice per seer. The loss in cleaning is about five- sixths.
Shahabad - - -	The cleaned cotton sold in the marts is imported; it fetches about 10 rupees per maund; it is inferior to the indigenous cotton of the district.	The ryot sells his cotton at three rupees per maund in an unclean state, and without any advances.	The churka is used, and the expense of cleaning is four an- nas for 13 seers.
Chumparun - - -	No cotton is cultivated in this	district for sale.	
JESSORE:			
Bancoorah - - -	The first quality of cleaned cotton sells at an average of 10 rupees per maund of 80 sa. weight. There are several sorts of maunds in use.	The ryots do not cultivate cotton under advances; they sell their cotton in an unclean state at from Rs. 2. 8. to 3 ru- pees per maund.	The khawee is used for cleaning cotton, and the cost of cleaning varies from 6 to 12 annas, according to the size of the maund.
Burdwan - - -	The average price of clean cotton is 9 rupees and 8 annas per maund of 80 sa. weight.	The cultivation of cotton under advances is very rare. Cotton, with the seed in, is usually sold at the rate of 16 to 17 seers per rupee.	Twelve annas per maund -
Hooghly - - -	The price of clean cotton is from 10 to 11 rupees per maund of 80 sa. weight.	The ryots sell their cotton in the unclean state at 2½ ru- pees per maund without ad- vances.	Cotton is cleaned with the churka, and costs 12 annas per maund.
Nuddea - - -	The price of clean cotton varies from 11 to 12 rupees per maund of 80 sa. weight.	The cotton grown is almost entirely used for home pur- poses. That sold in the marts is imported from other dis- tricts.	The churka is used to clean cotton.
Baraset, Jessore, 24 Pergunnahs, Soon- derbuns.	Cotton is not grown in these districts.		

calling for certain Information relative to the Cultivation, &c. of Cotton in India, &c.—*continued.*

4. What are the Expenses of conveying Cotton to the nearest Port for Shipment?	5. What is the average Produce of Cotton per Beegah or Acre?	6. What is the quantity of Land under cultivation with Cotton, and to what extent is it probable that the Cultivation could be carried in the event of an increased demand?	ABSTRACT of COMMISSIONER'S REMARKS.
<p>River carriage from Patna to Calcutta is about 2½ annas per sa. maund. Bullock carriage is about four annas per maund for 24 miles, and cart carriage three annas.</p> <p>Cotton is not exported from the Behar district.</p> <p>No cotton is exported. The cost of carriage would be about 10 annas per maund.</p> <p>The expense would be about Rs. 34. 12. per 100 maunds to Calcutta.</p>	<p>The average yield is about three maunds and eight seers per acre; hence the cultivation is but trifling.</p> <p>The average produce is about three maunds per beegah.</p> <p>Cotton is usually sown with some other crop, but the produce may be assumed at three to four maunds per beegah.</p> <p>Three maunds per beegah, or 4 maunds 32 seers per acre, one beegah and 12 cottahs being equal to an English acre.</p>	<p>About 1,250 acres, and it might perhaps be extended another 1,250 acres, but the soil is not generally favourable to the growth of cotton, and it requires very careful culture.</p> <p>About 7,000 beegahs are under cotton cultivation, but if advances were made, and the same facilities afforded as to opium cultivators, it might be extended to 12,000 beegahs.</p> <p>The quantity of land under cotton cultivation is not ascertainable.</p> <p>About 3,000 beegahs are at present under cotton cultivation, but under favourable circumstances the cultivation could be largely extended.</p>	<p>The Commissioner says that, generally speaking, the soil of the Patna division is not favourable to the growth of cotton, and that the supplies of the inhabitants are drawn principally from the North-west Provinces: but the cotton that is produced is considered superior to that imported, being finer and tougher in the thread. American seed has already been tried on a small scale, but without success; and from experience it is evident that the superiority of foreign sorts of cotton can only be kept up by annual importations of seed. The quantity of cotton imported into the Patna division from Mirzapore is about 50,000 maunds, which is principally the produce of Bundlekund.</p>
<p>No cotton is exported, but the expense of conveying cotton to Calcutta would be about eight annas per maund.</p>	<p>Two to 2½ maunds of 60 sa. weight per beegah of 40 yards square. Three such beegahs are about equal to one English acre.</p>	<p>There are about 18,000 beegahs under cotton cultivation, and it might be extended to 25,000 beegahs.</p>	<p>The maund in this district varies from 60 sa. weight to 90 sa. weight. The Company's rupee is that in use.</p>
<p>According to the part of the district where the cotton may be grown. If far in the interior, about five annas per maund.</p>	<p>About one maund and 13 seers per beegah,—1 rood 12 perches and 27 yards English.</p>	<p>Sixteen thousand beegahs, which could be doubled, were there sale for the produce.</p>	<p>The cotton grown is of a very inferior description, hence the sale is very limited. Cotton is imported from Mirzapore.</p>
<p>From two to eight annas per maund, according to distance from the river.</p>	<p>Two or two and a half maunds per beegah, or five or six maunds per acre.</p>	<p>The cultivation consists of about 9,000 beegahs, and might probably be doubled in the event of an increased demand.</p>	<p>The beegah here referred to consists of 80 cubits square, the cubit being 20 inches.</p>
<p>No cotton is exported from this district.</p>	<p>The average produce is about 7½ maunds per acre, or three maunds per beegah.</p>	<p>About 2,000 beegahs are under cotton cultivation, and in the event of an increased demand it might be extended to about 4,000 beegahs.</p>	<p>The Commissioner is of opinion that the estimate given of the existing cultivation of cotton in each district, and of the extent to which it could be increased, is much below the mark.</p>

ABSTRACT of the Replies of the Local Authorities to the Board's Circular of 21 February 1843.

DIVISIONS and DISTRICTS.	1. What is the Price of Cotton, freed from Seed, at the prin- cipal Mart or Marts in your District?	2. At what Price does the Ryot sell his Cotton, cleaned or uncleaned, and with or with- out Advances?	3. What is the Expense of clean- ing Cotton by the Churka or Foot-roller, or by any other method which may be in use?
Dacca: Sylhet - - -	Cotton freed from the seed, sells in the Sylhet Bazar at about Rs. 12. 8. cleaned, and 5 rupees uncleaned per maund of 80 lbs.	The ryots sell most of their cotton uncleaned, and do not receive advances.	The expense of cleaning by the churka is from Rs. 1. 8. to Rs. 2. 8. per maund of 80 lbs.
Backergunge - -	All the clean cotton sold in the principal marts of this district is imported principally from Mirzapore. The cotton grown in the district is sold in the bazars in an unclean state, and called "kupas." The price of the cleaned cotton which is imported into the district is 9 to 10. rupees per maund of 80 sa. weight.	All the cotton grown in the district is cultivated without advances. The ryots sell their cotton in the unclean state, at from Rs. 3 to Rs. 3. 8. per maund.	Women, who spin thread, separate the seeds from the small quantity of cotton they use by means of a roller. They seldom, if ever, clean a maund, but, taking the average, the expense of cleaning a maund by the roller would be about three rupees.
Cachar - - -	Cotton is not sold at any of the marts of this district freed from seed. The price of kupas in the cold weather at Oodarbund (inland) is three rupees per maund. At Lukypoor (on the river) 3½ rupees per maund, and at Sylchar (on the river) Rs. 3. 6. per maund. During the other months of the year it fetches two to three annas per maund more at each place.	The ryots sell no clean cotton in the district, but dispose of their kupas at their own houses, for about Rs. 2. 8., and often as low as Rs. 1. 8. per maund. They also sell it to merchants at Oodurpoor for about Rs. 2. 12., and at Lukypoor for about three rupees per maund. The ryots do not take any to Sylchar for sale.	The churka is commonly used, and the expense of cleaning one maund of kupas is from 10 to 12 annas. The maund of this district consists of 40 seers of 90 tolah weight. One maund of kupas will yield 37 lbs. of clean cotton.
Dacca - - -	The cotton produced in this district is invariably sold in its raw state, but clean cotton, which is imported from Mirzapore, sells at from 10 to 14 rupees per maund.	The ryots do not receive advances for cultivating cotton. They sell it in the unclean state at from Rs. 2. 8. to Rs. 3. 8. per maund of 40 seers, of 80 sa. weight.	There are two modes of cleaning cotton used in this district; one is by means of an iron katu (a kind of foot-roller) and the other by a churka, and the cost is about 10 annas the maund of unclean cotton, making the expense of obtaining a maund of clean cotton, Rs. 2. 8.
Furreedpore - -	A small quantity of cotton is grown in the district; principally for domestic use, and is called kupas; this is sometimes sold to the mahajuns, at the rate of four pice per seer of 60 tolahs. Cotton imported from the North-west Provinces is sold in the bazars at four annas per seer of 60 tolahs, and is called "toola."	There are no advances given for the culture of cotton. The ryot sells his cotton in an unclean state to the mahajun, at from three-fourths to one anna per seer; who retails it at an increased price of one quarter anna.	The cotton cleaned in the district is for domestic use, and the work is usually performed by the females of the ryot's family; when cleaned by hired labour the expense is from 1½ to two pice per seer of 60 tolahs.

calling for certain Information relative to the Cultivation, &c. of Cotton in India, &c.—continued.

4. What are the Expenses of conveying Cotton to the nearest Port for Shipment?	5. What is the average Produce of Cotton per Beegah or Acre?	6. What is the quantity of Land under Cultivation with Cotton, and to what extent is it probable that the Cultivation could be carried in the event of an increased demand?	ABSTRACT of COMMISSIONER'S REMARKS.
<p>The expense of conveying cotton to Calcutta would be about three annas and two pie per maund.</p> <p>The expense of conveying cotton to Calcutta, which is the nearest port, is about 20 rupees per 100 maunds.</p> <p>To send 500 maunds of cotton to Calcutta would cost about 80 rupees 2½ annas per maund, but at Sealtekh transit Ghat there is a duty of 10 annas and two pie upon every maund of cotton exported from the district, which would make the total cost of conveyance about 12½ annas per maund.</p> <p>Calcutta is the nearest port of shipment, and the expense of conveying the cotton there may be estimated at from 12 to 13 rupees per 100 maunds.</p> <p>Cotton is not exported, but the transit expense would be moderate, owing to the facilities of water carriage throughout the district.</p>	<p>The average produce of a koolba (3 A. 2 R. 19 P. 29 Yds.) is from 5 to 10 maunds, or 400 to 800 lbs.</p> <p>The average produce of cotton in this district is about 10 or 12 maunds per acre, and the expense of cultivation about 15 rupees per acre.</p> <p>The produce of cotton per keah or beegah is from 2½ to three maunds, not less. The keah is equal to 1792 square yards; 12 keahs make one kulba.</p> <p>The produce of a beegah may be calculated at from 1½ to two maunds. The beegah is equal to 4,800 square yards, the maund to 82½ lbs.</p> <p>From 10 to 20 seers of kupas, of 60 tolahs the seer, may be gathered from a pukhee of land (1,920 square yards), but the district is not considered favourable to the growth of it; the produce appears to be materially influenced by the dressing the land receives.</p>	<p>Cotton is only cultivated in the hilly parts of Thannahs Lateo and Hingageea, in which about 300 koolbas are under cotton culture. The land of Sylhet is almost all too low and wet for cotton cultivation.</p> <p>Probably about 2,000 acres of land are now under cotton culture, and the cultivation is capable of being increased on demand to about 6,000 acres; but it is difficult to answer this question, as there has never been any regular survey of the district.</p> <p>The land under cultivation with cotton is at present about 225 kulbas, but in the ensuing season it will be probably double that quantity; an increased demand would not cause any very great increase in the cultivation. The above anticipated increase in the cultivation is owing to the settlement of some 2,000 Kookies in the district, which people all cultivate cotton.</p> <p>The cotton cultivation is so scattered in small patches, that it is impossible to estimate the quantity of land so employed, but the produce is insufficient for local purposes, and cotton is, therefore, imported from Mirzapore to make up the deficiency. There are large tracts of land at present lying waste in the district, which might be brought under cotton cultivation if a sufficiently remunerative price could be got for it.</p> <p>The cultivation of cotton in this district is almost exclusively limited to the domestic exigencies of the ryots. If it were remunerative, it would of course be extended, until it entirely superseded the north-west cotton in the local market.</p>	<p>The Commissioner observes, that from the local returns it would appear that the only two districts of the Dacca division in which cotton can be said to be grown for market are Cachur and Dacca. In the former the cultivation is at present confined to the slopes of the hills, but there appears no reason why the plant should not thrive on the plains, and he thinks, with encouragement, the district would produce much more and better cotton than it does at present. Mr. Dunbar adds, that he intends to furnish the Superintendent with a small quantity of cotton seeds, both foreign and indigenous, for distribution amongst the ryots. In the Dacca district, the Commissioner remarks that cotton is now much less extensively cultivated than formerly, and this circumstance would lead to the belief that proper encouragement alone is wanting to restore it. The cotton, too, which is grown in some parts of the district is, on the whole, a finer and more delicate product than any other cotton in the world, and from it are woven the muslins which for a long time seemed to defy competition, and which even now, perhaps, leave every other fabric behind in fineness and delicacy of texture. This, too, shows that the soil of the district is not unadapted for the growth of the plant, and gives ground for hope that in time the hardiest sort of cottons, such as Patna, American, and Bourbon may be naturalised. Mr. Dunbar says, that looking to the above facts he is keen for continuing the experimental culture of cotton in the Dacca district, and he adds that the cotton, once successfully produced, there is no fear as to competition in respect to price, land, labour, and water carriage being abundant. He concludes by stating that he has directed the Government Cotton Superintendent, Mr. Price, in his proceedings, to bear in mind the excellent advice of Mr. Turner, the President of the Manchester Commercial Association, viz.: "In districts in which the American plant will not thrive, to encourage the growth of the best cotton that will grow."</p>

ABSTRACT of the Replies of the Local Authorities to the Board's Circular of 21 February 1848,

DIVISIONS and DISTRICTS.	1. What is the Price of Cotton, freed from Seed, at the principal Mart or Marts in your District?	2. At what Price does the Ryot sell his Cotton, cleaned or uncleaned, and with or with- out Advances?	3. What is the Expense of clean- ing Cotton by the Churka or Foot-roller, or by any other method which may be in use?
DACCA—continued. Mymensingh - -	Cleaned cotton, the produce of the district, is scarce, and of a very inferior quality; it is sold in the Mofussil bazars from Rs. 3. 6. to Rs. 5. 2. per maund. Cotton imported from other districts, freed from the seed, sells at the principal bazars from 8 rupees to Rs. 12. 4. per maund.	Cotton is not cultivated under advances in this district. The ryot sells his produce in the village bazars at from Rs. 3. 6. to Rs. 5. 2. per maund cleaned, and Rs. 2. 12. to Rs. 4. 8. per maund uncleaned; the maund consists of 40 seers of 60 tolahs.	The churka is not in use; cotton is cleaned by means of an iron hand roller, by which process the cleaning costs about 8 or 10 annas per maund, but the work is very imperfectly performed.
BHAUGULPORE: Tirhoot - -	Ten rupees per maund of 80 siccas to the seer; 40 seers equal to one maund.	Three sorts of cotton are grown in the district, viz., Koktee and Bhoglah, which sell at an average of two rupees per maund uncleaned, and Bhoochurra, an inferior sort, of which 1½ maund is sold for two rupees; cotton does not appear to be cultivated under advances.	The cost of cleaning cotton is about 10 annas per maund of 80 siccas to the seer.
Monghyr - -	Rs. 11. 12. per maund of 40 seers, the seer being 80 sa. weight.	The small quantity of cotton grown in the district is almost entirely consumed by the ryots for their own domestic purposes, the price cannot therefore be quoted.	The expense of cleaning cotton by the churka is about Rs. 2. 8. per maund.
Bhaugulpore - -	The only cotton to be found in the bazars of this district is imported from Mirzapore and other parts of the North-western Provinces, and is to be purchased at very low prices.	Cotton is not produced in this district except in very small quantities, for domestic use, by some of the ryots in the southern parts of it.	Not known - - -
Purneah - -	The cotton to be purchased in the bazars of this district is imported from the North-western Provinces, and is sold at about 4½ annas per seer partially clean.	No cotton whatever is cultivated in this district.	Unknown - - -
Dinagepore - -	From 8 to 13 rupees per maund, according as it may be fresh picked and well cleaned, or otherwise.	Not sold by the ryots - -	The churka is not used; cotton is cleaned by the hand, but at what expense is not known.
Maldah - -	Cotton imported from Mirzapore can be procured in the bazars of this district at from 8 to 13 rupees per maund, according to the size of the seer, which varies from 58 to 92 sa. weight.	The ryots of this district do not cultivate cotton.	Cotton is not cleaned in this district; it is imported clean.

calling for certain Information relative to the Cultivation, &c. of Cotton in India, &c.—*continued.*

4. What are the Expenses of conveying Cotton to the nearest Port for Shipment?	5. What is the average Produce of Cotton per Beegah or Acre?	6. What is the quantity of Land under Cultivation with Cotton, and to what extent is it probable that the Cultivation could be carried in the event of an increased demand?	ABSTRACT of COMMISSIONER'S REMARKS.
<p>There is no exportation of cotton from this district, neither is there any likelihood of any.</p> <p>No satisfactory reply can be given to this question, as cotton does not appear to be exported from the district.</p>	<p>Not ascertainable; the land upon which cotton is cultivated being small patches on the Sherepore and Soosung hills, which are temporarily brought under cultivation by the ryots, and are never measured.</p> <p>The average produce per beegah is about 2½ maunds, the beegah being 4,225 square yards.</p>	<p>There is nothing in the district which can properly be termed a cotton cultivation; the sort of vagrant cultivation which occurs varies from year to year, and it is impossible to say what quantity of land is under cotton cultivation; an increased demand for cotton would not be felt in the district.</p> <p>This district is not favourable to the cultivation of cotton, which does not probably exceed 5,000 beegahs.</p>	<p>The Commissioner observes that the districts comprising his division are not generally considered suitable to the growth of cotton, but that no information of much value can be obtained upon the subject; he thinks the adoption of cotton cultivation would be encouraged were Government to supply the landholders with the best foreign seeds gratis, for a year or two, and direct its officers to point out to them the great advantages likely to accrue from the extensive introduction of the plant.</p>
<p>The expense of conveying cotton from Monghyr to Calcutta averages about four annas per maund.</p>	<p>The average produce of the small quantity grown in the district is about 1½ maund per beegah of 3,025 square yards.</p>	<p>Probably the cultivation of cotton somewhat exceeds 2,000 biggahs, and under a system of advances some increase would possibly take place, but opium cultivation is preferred by the ryots, and would interfere with any considerable extension of cotton cultivation.</p>	
<p>No cotton exported -</p>	<p>Unknown - - -</p>	<p>There may be said to be no cotton cultivation in this district, but there appears to be a fair quantity of soil adapted to the growth of the plant; it is, however, at present almost entirely absorbed by opium and indigo, which the ryots cultivate under advances, and would not willingly give up for any other crop.</p>	
<p>The cost of conveying cotton to Calcutta would be about two annas per maund, or 4 d. per cwt.</p>	<p>None grown - - -</p>	<p>No cotton whatever is cultivated in the district.</p>	
<p>Cotton could be sent to Calcutta at about four annas per maund.</p>	<p>Unknown - - -</p>	<p>Probably under 500 beegahs, the soil not being suited, and the crop an uncertain one and troublesome to look after; cotton could never be extensively grown in this district.</p>	
<p>Cotton is not exported from this district.</p>	<p>None grown - - -</p>	<p>Cotton is not cultivated in this district, and the soil is stated to be not adapted for its production.</p>	

ABSTRACT of the Replies of the Local Authorities to the Board's Circular of 21 February 1848,

DIVISIONS and DISTRICTS.	1. What is the Price of Cotton, freed from Seed, at the prin- cipal Mart or Marts in your District?	2. At what Price does the Ryot sell his Cotton, cleaned or uncleaned, and with or with- out Advances?	3. What is the Expense of clean- ing Cotton by the Churka or Foot-roller, or by any other method which may be in use?
CUTTACK:			
Balasore - - -	Cotton freed from seed is procurable in the different bazars of this district at from 3½ to 2½ seers per rupee, the seer being 80 tolahs.	The ryot generally sells his cotton uncleaned at the rate of from 28 to 16 seers per rupee, and without advances. In some pergunnahs it is said that if advances are made, cotton can be had about three or four seers cheaper.	The method in use in this district in cleaning cotton is by the churka, and the expense is 4 annas per seer.
Pooree - - -	The price of cotton freed from seed varies at the different marts of the district from five annas seven pie to 12 annas 9 pie per seer of 105 rupees weight.	The price of cleaned cotton, without advance, is 13½ annas per seer, and, with advance, eight annas per seer. Uncleaned cotton is nine annas without advance, and 7½ annas with advance.	Cotton is generally cleaned in this district by churka, at an expense of 2½ annas per seer.
Cuttack - - -	The price of cotton freed from seed varies considerably throughout the district. The cost of a maund of 80 lbs. ranges from Rs. 10. 4. to 24 rupees. The general average amounts to Rs. 14. 3. 5.	The ryots always sell their cotton uncleaned, and without advances, and the prices they obtain range from two rupees to five rupees per maund, the average being Rs. 3. 6.	The instrument used for cleaning cotton is called a "khai," and consists of two wooden rollers, fixed in a common frame. It is worked by hand. The average cost of cleaning by this machine is Rs. 1. 2. 9. per maund.
Midnapore - - -	Cotton is not cultivated in this district, except in small quantities for domestic use. It is imported from Calcutta and adjacent marts of Lower Bengal, and sells, according to distance from the river, at from Rs. 12. 5. to 13. 5. per maund for first quality, and Rs. 11. 7. to 12. 5. for second quality, free from seed.	The cultivation being merely for the domestic wants of the ryot, no extensive sales take place. When one ryot sells to another, which is very seldom, he gets from Rs. 2. 8. to three rupees per maund uncleaned, and with the seed in, and from 12 to 13 rupees for cleaned cotton. Under advances, the price would probably be one rupee per maund lower.	The expense of cleaning is 10 annas per maund, by a foot-roller, called a "khaooce."
CHITTAGONG:			
Chittagong - - -	From Rs. 9½ to 10 per maund of 80 tolahs.	It is grown only in the hill country, on the frontier. The ryots sell their produce uncleaned, at 2½ rupees per maund.	Cotton is cleaned with the churka by women. One maund of clean cotton is produced from three maunds of unclean cotton. Three maunds unclean cotton cost about 7½ rupees, and the one maund clean cotton sells for about 9½ rupees, giving two rupees per maund profit.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA.

131

calling for certain Information relative to the Cultivation, &c. of Cotton in India, &c.—continued.

4. What are the Expenses of conveying Cotton to the nearest Port for Shipment?	5. What is the average Produce of Cotton per Beegah or Acre?	6. What is the quantity of Land under Cultivation with Cotton, and to what extent is it probable that the Cultivation could be carried in the event of an increased demand?	ABSTRACT of COMMISSIONER'S REMARKS.
<p>From two to 18 annas per maund, according to the distance of the place from which it has to be transported to the ports of Chooramun and Balasore.</p> <p>The expense of conveying cotton to Pooree for shipment is five annas per maund, exclusive of the hire of Massoolah boats.</p>	<p>The produce varies from one to three maunds on good land, and from 30 seers to one maund on inferior.</p> <p>Ten seers is the average produce per beegah. The seer in general use is 105 rupees weight, and 40 such seers make one maund. The beegah is equal to the English acre.</p>	<p>About 1,485 acres of land are under cotton cultivation, and it does not appear that the cultivation could be increased to any great extent, the staple produce of the district being paddy.</p> <p>The quantity of land under cotton cultivation is about 10,390 beegahs, and the cultivation could probably, in the event of an increased demand, be extended about 500 beegahs further, but the soil is not generally suitable to the growth of cotton, and the heavy cost of land carriage would be a bar to its cultivation for export. At present the culture is restricted to local wants, and is not even sufficient for those.</p>	<p>The Commissioner has not offered any remarks.</p>
<p>Cotton is not exported, the quantity produced not being sufficient for local consumption. The cost of transit to Calcutta would probably amount to one rupee per maund, or to Balasore six annas per maund. The cost of transit to the mouth of the Dhamrah river would be only about three annas per maund, but shipment from thence would be very difficult.</p>	<p>The produce per acre of 43,560 square feet varies from 30 seers to five maunds, the average being two maunds 16 seers.</p>	<p>There are at present only 10,100 acres of land under cotton cultivation, but were sufficient inducement offered, the cultivation could probably be increased one hundred fold. The cost of clean cotton is, however, now equal to 4½d. per pound in the district, and the additional charges of carriage to Calcutta, shipment to England, &c. would raise it above the selling price of the New Orleans cotton in England, and thus preclude any chance of competition.</p>	<p>The collector remarks that the American cotton would probably grow most luxuriantly in the district, for deputy collector Brijoosunder Roy has some thirty or forty cotton trees raised from Georgian or New Orleans seed, which he procured from Mr. R. Hunter, the collector, in 1832, and these trees, some of which are 15 years old and others six years old, produce three crops annually without cultivation, irrigation, or labour of any sort being bestowed upon them. Each crop, too, is equal to three or four ordinary crops of indigenous cotton, and the cotton itself beyond all comparison superior.</p>
<p>From two to four annas per maund, according to the distance of land carriage within the district.</p>	<p>Four maunds of uncleaned cotton per beegah. The beegah of this district is equal to 22,002 square feet. The maund is the bazar maund, equal to 83 lbs.</p>	<p>Probably 3,450 acres of land are now under cotton cultivation, but there are about 300,000 acres of land in the district capable of growing cotton, and it is believed that some of the Jungle lands of the western part of the district are also suitable to the plant, the soil being something similar to that of Bundelcund.</p>	<p>The collector remarks, that when there was a commercial resident at Radanagore, there was a considerable growth of cotton in the district to supply the demand for cloths, which were then exported from this country; and if there were a ready market for cotton, its cultivation would be extensively introduced, as the exportation would not be attended with much difficulty.</p>
<p>Cotton is conveyed to Calcutta for five annas per maund, and to Naraingunge, the great cotton mart in Dacca, for four annas per maund.</p>	<p>About 34 seers per beegah of 14,400 square feet, but it is grown in the hills only, and mixed with other things.</p>	<p>Unknown. It is now only grown in the hills, though formerly large quantities were grown on the plains. The crop grown on the hills is probably about 75,000 maunds of uncleaned cotton.</p>	<p>The Commissioner is of opinion that a very considerable rise in price and facility of sale would be requisite to increase the cultivation of cotton in his division. At present it is almost entirely confined to the hill tribes, and is cultivated by them only in a very desultory manner, mixed with rice, melons &c.</p>

ABSTRACT of the Replies of the Local Authorities to the Board's Circular of 21 February 1848,

DIVISIONS and DISTRICTS.	1. What is the Price of Cotton, freed from Seed, at the prin- cipal Mart or Marts in your District?	2. At what Price does the Ryot sell his Cotton, cleaned or uncleaned, and with or with- out Advances?	3. What is the Expense of clean- ing Cotton by the Churka or Foot-roller, or by any other method which may be in use?
CHITTAGONG—continued.			
Bullooah - -	Cotton is not sold in this dis- trict in the clean state.	Hardly any is raised. The ryot sells his produce uncleaned at 3 rupees. If he receives ad- vances, at 2½ rupees per maund.	It is cleaned by the churka at 1 rupee per maund.
Tipperah - -	From 8 to 10 rupees per maund of 82 tolahs.	None grown for sale in the plains. The hill cotton sells at 1½ to 2½ rupees per maund in the uncleaned state.	It is cleaned with the churka by women; cost unknown.
CHOTA NAGPORE:			
Hazareebagh - -	It is sold at the rate of 3 seers, of 80 tolah weight each, per rupee.	The ryot sells his cotton un- cleaned at the rate of 14 seers per rupee, without advances, which are not usual in this dis- trict.	One maund of clean cotton is usually produced from 4 maunds of raw cotton, and the expense of cleaning by the churka is about 12 annas per maund of clean cotton.
Lohardugga - -	It commonly sells in the bazar at 3½ seers (of 80 tolahs weight) per Co's rupee.	The ryots sell their clean cotton at 3 seers per rupee, and under advances at 3½ seers. The kupas, with the seed in it, is sold at 12 or 13 seers per rupee.	Cotton is cleaned by the churka at an expense of 3 pie per seer; and for spinning cotton the charge is 1 anna per seer.
Maunbhoom - -	Uncleaned cotton generally sells at 16 seers per rupee; 40 seers of 80 sicca weight make 1 maund.	The ryots do not receive any advance from the cotton ven- dors, but they cultivate it at their own expense, and dispose of it in an unclean state at 16 seers per rupee.	The churka is used for clean- ing, at a cost of 5 annas for each maund.
ASSAM:			
Gowalparah - -	Principal mart is Gowal- parah, and the selling price of clean cotton of all descriptions is from Rs. 8. 8. to 9 rupees per maund of 80 tolahs.	No advances are made to the Garrow cultivators of cotton, and they generally dispose of their cotton at the Garrow hauts in an uncleaned state, at from Rs. 2. to Rs. 2. 4. per maund. The clean cotton which they have for sale ave- rages perhaps 1,000 maunds per annum, and realises from Rs. 4. 12. to 5 rupees at the hauts under the hills.	The churka is the only in- strument used for cleaning cot- ton, and the expense is about 12 annas per maund. Garrow cotton contains equal portions of seed and cotton, while the Upper Assam cotton yields only 16 seers of cotton to 24 seers of seed.
Durrung - -	There is no current rate for clean cotton, as it is invariably sold with the seeds in it.	In October and November the price of uncleaned cotton is about Rs. 3. 6. per maund; at other seasons it sometimes fetches as much as Rs. 4. 8. Under advances, while the crop is on the ground, it may be obtained for Rs. 2. 8. per maund of 80 tolahs.	A maund of cotton yields about 15 seers of clean cotton. The seed is extracted by an instrument called a "neothun- nee," of very rude description, by which about 2 seers may be cleaned in one day, which makes the cost of cleaning amount to about Rs. 1. 4. per maund.

calling for certain Information relative to the Cultivation, &c. of Cotton in India, &c.—continued.

4. What are the Expenses of conveying Cotton to the nearest Port for Shipment?	5. What is the average Produce of Cotton per Beegah or Acre?	6. What is the quantity of Land under Cultivation with Cotton, and to what extent is it probable that the Cultivation could be carried in the event of an increased demand?	ABSTRACT of COMMISSIONER'S REMARKS.
<p>From Noacolly to Calcutta the expense would be about 12 rupees per 100 maunds.</p> <p>About 4 annas per maund.</p>	<p>About 20 seers per Bengal beegah, as above.</p> <p>Unknown; but believed to be but trifling.</p>	<p>There is very little cotton cultivated in the district, the land being for the most part low and salt.</p> <p>Scarcely any cotton is grown in the plains. The cotton sold in the marts is almost entirely produced in the hills.</p>	
<p>The expense of conveying cotton to Calcutta would be about 19 rupees per hackery load of 11 maunds, to about Rs. 1. 11. 6. per maund.</p>	<p>The average produce is about 1 maund 33 seers per beegah; the beegah is a square of about 180 feet.</p>	<p>The extent of land in cotton cultivation is about 4,080 beegahs, but there is abundance of land in the district which could be brought under cotton cultivation were there an increased demand for the article.</p>	<p>The Commissioner says that the staple of the cotton produced in the three districts of his division is short, and the cotton itself by no means good. But in Sumbulpore, in the political agency, the indigenous cotton is remarkably fine, and the mode of cultivation pursued there is very good.</p>
<p>The cotton produced is consumed at home. If any were sent to Calcutta, it would cost about 1½ rupee per maund, sent on bullocks.</p>	<p>The average produce of cotton of a beegah is 10 seers. The beegah consists of 20 cottahs of 7½ feet square.</p>	<p>About 20,000 beegahs are in cotton cultivation. With an increased demand there is every probability that an increase of 30,000 beegahs of cotton cultivation might ensue.</p>	<p>The Commissioner adds, that he proposes to distribute some cotton seed, expected from Dr. Royle, to the Sumbulpore zemindars, and to send persons with the seed to see it sown on proper soil. The soil of Hazareebagh, Lohardugga and Maunbhoom is not, in the Commissioner's opinion, generally adapted for the growth of cotton.</p>
<p>Four annas and a half per maund.</p>	<p>Two maunds per beegah. The beegah is 120 feet square.</p>	<p>7,500 beegahs are at present under cotton cultivation, which could be increased to 100,000 beegahs, or even more.</p>	
<p>The cost of transit from Gowalparah to Calcutta is about four annas per maund in country boats.</p>	<p>About 3 to 3½ maunds per beegah, of 1,600 square yards, or 40 × 40 yards.</p>	<p>No means of ascertaining this, as the whole of the cotton sold at the hauts is the produce of the Garrow country; but it is certainly not less than 15,000 beegahs, producing 45,000 maunds, and the cultivation may be increased to any amount that the industry of the people will allow, and increased demand call for.</p>	<p>The Commissioner says that the cotton sold in Assam, which amounts to about 100,000 maunds, is principally the produce of the Garrow and Naga hills; but that there is a vast quantity of land, especially in Gowalparah, Nowgong, and Lukimpore, well adapted for cotton cultivation; and any circumstances which caused a very trifling rise in the price of the wool would, he imagines, be attended with a great increase in the cultivation of the plant. The assistant in charge of the Gowalparah district recommends a small experimental farm there, to be worked by convicts, but the Commissioner thinks that if any experiment is to be made, it would be better to make the trial at Mut-tuck, under the superintendence of the Chinese tea overseer, as it could be conducted by him more efficiently and cheaply than under a separate manager, and would by no means interfere</p>
<p>The cost of boat hire from Tezpore, the principal station, to Calcutta, is about 8 annas per maund.</p>	<p>One poorah, equal to 1.19146 English acres, will yield 6 to 7 maunds of cotton in a favourable season.</p>	<p>Cotton is produced in this district chiefly on the low hills or high forest land. About 800 or 900 poorahs are under cultivation; 400 or 500 maunds may annually be obtained, besides what is reserved for home use by the ryots, and if encouragement were afforded the cultivation would be greatly extended.</p>	<p>interfere</p>

ABSTRACT of the Replies of the Local Authorities to the Board's Circular of 21 February 1848,

DIVISIONS and DISTRICTS.	1. What is the Price of Cotton, freed from Seed, at the prin- cipal Mart or Marts in your District?	2. At what Price does the Ryot sell his Cotton, cleaned or uncleaned, and with or with- out Advances?	3. What is the Expense of clean- ing Cotton by the Churka or Foot-roller, or by any other method which may be in use?
ASSAM—continued. Nowgong	The cotton is always sold by the growers and by the merchants in an unclean state.	The ryot sells his cotton uncleaned at three rupees per maund; but if advances are made by the traders while the crop is growing, then it is valued at two rupees the maund.	Cotton is cleaned by a churka, and the cost of cleaning is 10 seers of salt, equal to Rs. 1. 4. per maund.
Seebisagur	No cotton cleaned from seed is to be had in any mart of this district.	The cotton comes from the neighbouring Naga Hills, and is generally bartered, and the money value realised by the producer cannot be estimated.	The cleaning of cotton is generally an ordinary household work, and the actual expense cannot therefore be given.
Seebisagur, sub-division Golahghât.	The cotton procurable is all uncleaned, and costs on an average about Rs. 2. 8. per maund of 40 seers.	The Nagas and Meekirs bring the cotton to market themselves, or dispose of it to petty traders in their own villages in barter for salt, dows, spears, beads, iron, tin, fish, &c., estimating one weight of salt as equal to two of cotton.	There is no trade carried on in clean cotton. Three seers of cotton are purchased for about four annas, and given to an Assamese woman, who cleans, spins, and makes it into a cloth, which is worth about one rupee, and she is paid from four to eight annas for her labour.
Lukimpore	Not procurable in a clean state.	Uncleaned cotton is sold at about Rs. 2. 8. per maund of 40 seers.	Not ascertainable, as all the cotton is exported unclean, and that used for home consumption is cleaned and prepared in the family.
Kamroop	Cotton freed from the seed is only occasionally procurable in the Gowahatty Bazar, and then at 10 to 12 rupees per maund. Uncleaned cotton fetches Rs. 3. 8. to 4 rupees per maund of 82 lbs.	The ryots sell their cotton under advances at Rs. 2. 8. per maund; without advances at 3 rupees to Rs. 3. 8.; but the plant is not much cultivated.	The instrument used is called a "nagata," and is similar to the churka of Bengal. The loss by cleaning is about 22 seers per maund, and the cost of the operation is about Rs. 1. 4. per maund. The work is usually performed by women, and generally for home consumption only.
Kamroop, sub-division Burpettah.	Cotton freed from the seed is but rarely procurable at Burpettah, and never but in small quantities; the price is about 10 rupees per maund. The unclean cotton sells at 3½ to 4 rupees per maund of 82 lbs. The cotton sold in the bazars is generally the product of the Garrow or Naga Hills.	The ryots usually only cultivate for household consumption; but when they do sell cotton, the price is very little under the bazar rate.	Cotton is cleaned by the nagotah or churka. The wastage is about 22 seers per maund, and the operation costs about 1½ rupee. The work is performed by women, who also weave it into cloth.

calling for certain Information relative to the Cultivation, &c. of Cotton in India, &c.—continued.

4. What are the Expenses of conveying Cotton to the nearest Port for Shipment?	5. What is the average Produce of Cotton per Beegah or Acre?	6. What is the quantity of Land under Cultivation with Cotton, and to what extent is it probable that the Cultivation could be carried in the event of an increased demand?	ABSTRACT of COMMISSIONER'S REMARKS.
<p>The cost of conveying one maund of cotton from the Naker Hills to Nowgong is about three annas; thence to Gawalpara about three annas more; and from Gawalpara to Calcutta, four annas.</p> <p>Calcutta is the nearest port, and the expense of conveying cotton thither would not be less than 1 rupee to Rs. 1. 2. per maund.</p> <p>The expense of conveying cotton from Golahghat to Gawalpara is about eight annas per maund, and thence to Calcutta a similar sum.</p> <p>From 12 annas to 1 rupee per maund.</p> <p>The expense of conveying cotton to Calcutta is about eight annas per maund.</p> <p>Cotton could be conveyed to Calcutta at about six annas per maund.</p>	<p>One poorah of hill land planted in April and cut in September or October yields about 10 maunds of cotton.</p> <p>Nearly all the cotton used in the district comes from the Naga Hills, and the produce is therefore unknown.</p> <p>It is not known what quantity of cotton the Nagas and Meekirs procure from a given quantity of land.</p> <p>The average produce is about 60 seers per beegah of 120 square feet.</p> <p>The average produce is about three maunds of unclean, or 90 lbs. of clean cotton per acre.</p> <p>A poorah (equal to 1½ English acre) produces about six maunds of unclean cotton, or 2 maunds 23 srs. of clean cotton, which is equal to 180 lbs. of clean cotton per acre.</p>	<p>The extent of land in cultivation has not been ascertained, as it is grown among the half civilised tribes only; but there is a vast quantity of land well adapted to the growth of the plant.</p> <p>The cotton being produced in the Naga Hills the extent of cultivation is unknown; but it is believed that, with a good demand, the cultivation would be greatly increased.</p> <p>From 10,000 to 15,000 maunds are annually exported from Golahghat and Terphat; but it is not known what quantity could be produced in the event of an increased demand.</p> <p>Cotton is usually sown with the ouse paddy, and collected after the latter crop has been reaped. There are about 6,700 beegahs sown in this way, which produce about 10,000 maunds of unclean cotton, but the cultivation could be greatly extended.</p> <p>About 1,200 acres are usually in cultivation in Kamroop, but the principal part of the cotton sold in the district is grown by the neighbouring hill tribes. There are about 60,000 acres of waste land in Kamroop fit for the production of cotton, but labour is too scarce to expect any increase in the cultivation.</p> <p>About 450 acres are now in cultivation, but there are 25,000 acres of waste land fit for the growth of the plant. The cotton now cultivated is the common kupass, but the upland Georgia would probably grow well in many parts of the district.</p>	<p>interfere with the tea plantations, but rather assist them, and cheapen all operations, as the coolies would then be retained in more permanent employment, and the fixed establishment would be available for overseeing and directing the cotton cultivation. The lands of Muttuck are, he says, high and well drained, but the climate is cool and wet, much, he imagines, resembling the climate of Coimbatore and Tinnivelly, which are so favourably noticed by Dr. Royle for the growth of American cotton; and he is persuaded that good cotton could be grown on them from the superior indigenous seeds and acclimatised American seeds; but that great care is requisite in supplying and forwarding the seeds.</p>

ABSTRACT of the Replies of the Local Authorities to the Board's Circular of 21 February 1848,

DIVISIONS and DISTRICTS.	1. What is the Price of Cotton, freed from Seed, at the principal Mart or Marts in your District?	2. At what Price does the Ryot sell his Cotton, cleaned or uncleaned, and with or with- out Advances?	3. What is the Expense of clean- ing Cotton by the Churka or Foot-roller, or by any other method which may be in use?
ARRACAN:			
Aeng - - -	Clean cotton sells at the Sudder station at the rate of one rupee for two biswas = $3\frac{1}{2}$ lbs.; one biswa being equal to about $1\frac{3}{4}$ lb. avoirdupois.	The cotton is raised by the Khungs in their joom or hill cultivations only, and is sold by them in the raw state at the rate of eight biswas per rupee. Advances are never made.	It is difficult to say what is the expense, but a woman will clean about one biswa in a day.
Ramree - - -	There is no mart in this district for cotton of home production, as the people are almost entirely supplied with the article from Burmah.	The ryot vends his cotton at about 11 seers per rupee uncleaned, but he generally produces it only for home consumption.	The churka is used, and one man will clean about three seers per day, which would make the expense of cleaning about 2s. 8d. per maund.
Arracan - - -	Cleaned cotton is unknown as an article of sale or commerce, whether in the interior or at the chief mart of the district.	The price at the different villages where the cotton is produced averages about two rupees per maund of 82 lbs., and it fetches at Akyab from 2s. 8d. to 3s. 4d. per maund. Advances are never made.	Cotton is never cleaned for sale, but it may be cleaned to order at $1\frac{1}{2}$ rupee per maund.
Sandoway - - -	Cotton freed from seed is not sold in the marts of this district. The seeded cotton fetches at Sandoway about about one rupee for $6\frac{1}{2}$ viss, = $23\frac{3}{4}$ lbs.	The ryot cultivates without advances, and sells his cotton in the raw state at the price noted in the foregoing column.	Cotton is cleaned by the churka at the rate of $1\frac{1}{2}$ rupee per maund of 80 lbs.
TENASSERIM:			
Amherst - - -	Twelve annas per viss in Maulmain, the viss being equal to one seer $2\frac{1}{2}$ chittaks, bazar weight.	Sales of clean cotton by the ryots are almost unknown; unclean the price is six rupees per 100 viss in the cotton villages. No advances are made to the ryot; 100 viss are equal to 4 maunds 17 seers and 12 chittaks, bazar weight.	Cotton is cleaned by the churka, and the expense is about eight annas per viss on the cleaned cotton. 100 viss of raw cotton yield about 80 viss of clean cotton.
Mergui - - -	Cleaned cotton is not procurable, but cotton with the seed in is sold at from 12 to 15 rupees per 100 viss, equal to 365 lbs. English.	Cotton is not grown in the district except by the wild Kurcus on the hill clearances.	Cotton is not cleaned for sale.
Tavoy - - -	The cotton in use is imported from Maulmain and Rangoon.	Cotton is not grown in this district.	Unknown -

calling for certain Information relative to the Cultivation, &c. of Cotton in India, &c.—*continued.*

4. What are the Expenses of conveying Cotton to the nearest Port for Shipment?	5. What is the average produce of Cotton per Beegah or Acre?	6. What is the quantity of Land under Cultivation with Cotton, and to what extent is it probable that the Cultivation could be carried in the event of an increased demand?	ABSTRACT of COMMISSIONER'S REMARKS.
<p>The question is not applicable to the Aeng district, so little cotton being grown.</p> <p>None has ever been shipped.</p> <p>For what cotton is produced in the district there is everywhere water carriage to Akyab, and the cost would not exceed four annas per maund.</p> <p>Cotton is usually only grown for home consumption, but it could be conveyed to Akyab in native boats at the rate of eight annas per maund.</p> <p>About 12 annas per 100 viss for conveying the cotton from the interior to Maulmain.</p> <p>Unknown - -</p> <p>Unknown - -</p>	<p>The produce of a doon of land is said to be about 250 biswas of unclean cotton. The doon is equal to 6½ acres.</p> <p>Each doon of plain cultivation is capable of yielding about 180 maunds. In the hills the yield is about 200 maunds per doon.</p> <p>Owing to the nature of the ground it is impossible to give even an approximation to the yield of cotton per beegah or acre.</p> <p>The average produce per doon, or 6½ acres, is 48 maunds.</p> <p>Ninety-seven viss per acre, or 4 maunds 12 seers 10 chittaks, bazar weight.</p> <p>Unknown - - -</p> <p>Unknown - - -</p>	<p>The cultivation only consists of 11 doons; and though the demand far exceeds the supply, the uncivilised cultivator is not stimulated thereby to increase it.</p> <p>The cultivation consists of about 13 doons of plain land and four doons, of hill, and there is not much chance of its being extended.</p> <p>The cultivation of cotton is almost entirely confined to the wild hill men, and is exceedingly rude. An increased demand would not for years to come be likely to cause an increase of cultivation.</p> <p>The quantity of land under cultivation is about 380 acres, and it might be increased to 1,500 acres if there were demand. The cotton is of great fineness, white, and strong in the staple, but rather short. That grown on the alluvial plains far exceeds in fineness and length of staple that grown in the uplands.</p> <p>There are about 600 English statute acres of land under cotton cultivation, and though there are several thousands of acres fit for the growth of the plant, an increased demand would not be likely to increase the cultivation greatly.</p> <p>There is, so to speak, no cotton cultivation in Mergui; what is not imported from Maulmain, &c., is grown by the wild Kurcus on their hill clearances, and is of a very inferior quality.</p> <p>Cotton is not grown in this district. An attempt was made in 1834-5 with Pernambuco seed, but it failed.</p>	<p>The Commissioner has not offered any remarks.</p> <p>The Commissioner says that cotton is not grown in the Tenasserim Provinces except in the Amherst district, as the little produced by the Kurcus in their temporary clearances among the hills is not worth consideration, not alone from its insignificance, but in consequence of its inferiority. The trials of American seed made by Mr. Blundell seem not to have been very successful, but the Pernambuco, or true cotton, is said to thrive in particular localities.</p>

(True copy.)
(signed) W. Seton Karr,
Under Secretary to the Government of Bengal.

(signed) G. Plowden,
Secretary.

I.
Bengal and
North Western
Provinces.

EXTRACT Agra Revenue Narrative (N. W. P.), dated 12 May (No. 2) 1847.

Revenue proceed-
ings, March 1846,
Nos. 8 and 9.
Revenue proceed-
ings, Nov. 1846,
Nos. 67 and 72.

47. IN these papers is contained the information desired by the Honourable Court in their despatch, No. 11, of 16th December 1845, respecting the causes which might have operated to render Bundelcund unproductive in an article which had been considered its staple.

48. A memorandum on the subject was obtained from Mr. H. Bell, which will also be found in the collection.

49. It will be seen that his Honour is disposed to concur in the latter's opinion, that the cultivation had not decreased, but that the increased consumption of cotton manufactures had taken off all that was before exported, and had kept pace with the increasing import. Every inquiry went to prove that the people were more numerous than they had been, and were much better clothed.

EXTRACT from the Proceedings of the Honourable the Lieutenant-Governor of the North Western Provinces in the Revenue Department, dated the 4th March 1846.

(No. 15.)

No. 8. From *W. Edwards*, Esq., Under Secretary to the Government of India with the Governor-General, to *J. Thornton*, Esq., Secretary to the Government, North Western Provinces, Agra.

Home Department.

Sir,
I AM directed to transmit, for the information of the Honourable the Lieutenant-Governor, copy of a despatch, No. 11, dated 16th December last, and received on the 9th inst., from the Honourable the Court of Directors, relative to the operations of, the American cotton planters.

I have, &c.
(signed) *W. Edwards*,
Under Secretary to the Government of India
with the Governor-General

Camp, Ferozepoor, 12 February 1846.

The following Letter is written to the Commissioner, Allahabad Division :—

(No. 904.)

No. 9. From *J. Thornton*, Esq., Secretary to Government, North Western Provinces, Agra, to *R. Lowther*, Esq., Commissioner, Allahabad Division.

Revenue
Department.

Sir,
I AM directed by the Honourable the Lieutenant-Governor to transmit to you the annexed extract (para. 5*) from a despatch from the Honourable the Court of Directors, No. 11, of the 16th December last, relative to the operations of the American cotton planters, and to request that you will favour the Government with your opinion on the subject mentioned by the Honourable Court.

I have, &c.
(signed) *J. Thornton*,
Secretary to Government, North Western Provinces.

Agra, 4 March 1846.

* Para. 5. "As the Revenue Commissioner of the Allahabad Division appears to have given great attention to the experimental operations conducted by the American planters, we should be happy to receive from Mr. Lowther any information which he may be able to collect from well informed persons, European as well as natives, respecting the causes which may have operated during the last 30 years to render Bundelcund unproductive in an article which, before that time, was considered to be its staple product."

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 139

I.
Bengal and
North Western
Provinces.

EXTRACT from the Proceedings of the Honourable the Lieutenant-Governor of the North Western Provinces in the Revenue Department, dated the 7th November 1846.

(No. 8 of 1846.)

From R. Lowther, Esq., Commissioner, Allahabad Division, to J. Thornton, Esq., Secretary to Government, North Western Provinces, Agra.

No. 67.

Sir,

I HAVE the honour to acknowledge the receipt of your letter, dated the 4th March last, No. 904, with annexed extract (para. 5) from a despatch from the Honourable the Court of Directors, No. 11, dated the 16th December 1845, directing me to ascertain and report the causes which may have operated during the last 30 years to render Bundelcund unproductive with respect to the growth of cotton. Miscellaneous Revenue.

2nd. I am not aware of the precise grounds on which this information is required, nor the circumstances under which a period of 30 years has been assumed as the data from which the province is supposed to have been less productive.

3rd. If the information required by the Honourable Court is connected with the failure of the late cotton experiment in Bundelcund, and an impression has been created that that failure is in any measure connected with the deterioration of the soil, I have no hesitation in affirming that such is not the fact. There are undoubtedly some localities better adapted to the cultivation of this staple as respects seasons than others, and it occurred to me that the mistake which the late Captain Bayles fell into, was that of selecting positions too near to the Jumna, where the seasons are said to be more precarious than in the more southern districts.

4th. Nothing could more satisfactorily establish the fertility of the soil under careful and scientific management than the result of the first season's operations; the cotton fields were the admiration of the people, who travelled from considerable distances to see them. The season was below an average, for in many parts, including the farm on the bank of the Jumna in the Cawnpore district, the fields of native cotton either partially or wholly failed, yet the adjoining American plant was not only very healthy, but produced an abundant crop. The succeeding seasons were still more adverse, the planters became dispirited, and in the absence of the stimulus imparted to them, through the energy of the late Captain Bayles, they became dissatisfied and disheartened, and requested they might be removed to a climate better suited to the experiment.

5th. I am informed by Mr. Bruce, who is an old resident of Bundelcund, and for many years attached to the commercial residency at Calpee, and extensively engaged in agricultural pursuits, that Bundelcund first became less productive in the growth of cotton on the discontinuance of the Company's trade in 1834, at which period a variety of other causes must have combined to affect the trade generally throughout the country; for independently of the falling off both in the demand and price from that cause, the growth and exportation of American cotton (so greatly superior to Indian produce) was on the increase; at this period too all the principal agency houses in Calcutta failed, many of whom exported largely to the China market; and the district of Bundelcund was visited by a serious famine, which was succeeded by another of greater calamity in 1837, which swept away both man and beast; added to this, about 15 years ago 588 estates in the Banda district, the revenue of which amounted to more than two-thirds of the revenue of the whole district, were thrown upon the hands of the tehseeldars, and held under Kham management for three years: it would be superfluous to descant upon the evils of this system; the measure, however, was forced upon Government, and there was no help for it at the time; most of the estates, partly through the previous neglect and mismanagement of the landholders, and partly through poverty, had become deteriorated from the increased growth of the deep-rooted jungle grass which had extensively spread over them; and there is little reason to doubt that during that period the cotton cultivation greatly diminished. Since that period cholera has committed its ravages and carried off vast numbers of cultivators; and although the survey returns prepared a few years ago exhibit a population of 149 to the square mile, there can be no doubt that that estimate at the present time is much beyond the mark.

6th. Mr. Wright, in his report on the Banda Settlement in 1843, notices a strange custom as prevalent in the district; he states that a cultivator has been held to cultivate, or at any rate to be responsible for the payment of the rent of a given area, whether cultivated or not; hence, if he has a certain quantity of good soil which he can efficiently manage and for which he pays an adequate rent, he cannot retain the good land and resign the bad which he is unable to cultivate; he must pay for both. Mr. Wright mentions having discouraged the system, and considers that it should not be countenanced otherwise than under written engagements; this is one of the consequences of an under-populated district.

7th. In my communication with the collector of Banda I am informed that cotton is still considered the staple of the district, and that the natives whom he has consulted on the subject, affirm that the area under cultivation is as extensive now as ever it was, but they allege that the produce of the plant is less than in former years, owing to the extremely slovenly system of cultivation which obtains in the district; here again is another proof of a

I.
Bengal and
North Western
Provinces.

limited population; the cultivators have more land allotted to them than they can efficiently manage, and that which is done is badly done. I believe the evil is not simply confined to a want of hands, but of cattle also; the seasons, moreover, for some years past have not been so propitious as formerly, and this has proved the great drawback.

8th. Mr. Bruce informs me that the cotton trade experienced a great check in 1819 from the heavy loss sustained by speculators in Great Britain, amounting, according to the best information, to nearly 3,000,000*l.* sterling. I do not think that the trade in Bundelcund was affected by that contingency; such is not admitted; the prices have fallen only of late years. I have obtained from the deputy collector of customs at Calpee a statement of the extreme prices of cotton in the bazar, and he informs me, on the authority of a cotton merchant, that once only, in 1820, were sales effected at so high a price as 27 rupees per maund; and from 13 rupees to 17 rupees per maund from 1816 to 1839. The table of prices as extracted from the merchants' books bears date from 1835 to 1846, a copy of which is annexed; and it will be seen that the depreciation commenced in 1843, from which period up to the present date the sales averaged as low as from 8 to 10 rupees per maund. I also annex a table showing the amount of duty collected at the Calpee Customs-house from 1835-36 to 1845-46. I also annex a statement exhibiting the amount of export and import duty collected at the old Cawnpore Custom-house from 1818-19 to 1830-31, which includes both the produce of the Doab and Bundelcund; by a comparison it would appear that of late years the trade in Bundelcund has greatly increased.

9th. It is clear, however, that India cannot compete with the American market, and it must be borne in mind that the increased importation of cotton cloths and twist has caused a considerable decrease in the consumption in this country, and particularly in Bengal, where its manufacture into fabrics of various descriptions has been almost entirely superseded by the imports from Great Britain.

10th. Formerly the export of Indian cotton manufactures to England, France and America, formed a valuable and important branch of the Calcutta trade, but this trade has almost entirely ceased, and vast quantities of cotton goods suited to the wants of the natives are now imported.

✓ 11th. Before the Company's trade was discontinued, it is estimated that British Bundelcund produced annually something more than a lac of bales of cotton, and about the same quantity was grown in the Jaloun and Jansi states. In former years the people had not only to contend against unfavourable seasons, but an oppressive assessment; from the evil effects of the latter system they are rapidly recovering, and the article is capable of being so cheaply produced in Bundelcund, that if a demand were created for it, there would be no difficulty in increasing the cultivation much beyond its former extent.

I have, &c.

(signed) R. Lowther, Commissioner.

Commissioner's Office, 4th Division, Allahabad,
12 September 1846.

STATEMENT showing the Amount of Duty collected on Cotton at the Calpee Customs,
from 1835-36 to 1845-46.

SEASONS.	QUANTITY.			DUTY.		
	<i>M.</i>	<i>s.</i>	<i>c.</i>	<i>Rs.</i>	<i>a.</i>	<i>p.</i>
1835-36 - - - -	261,189	33	4	108,624	7	8
1836-37 - - - -	361,859	30	1	150,441	6	2
1837-38 - - - -	385,009	22	11	160,353	7	0
1838-39 - - - -	372,460	4	4	155,187	10	7
1839-40 - - - -	319,830	37	8	133,262	14	4
1840-41 - - - -	276,481	36	12	136,915	13	9
1841-42 - - - -	273,303	2	4	136,652	6	5
1842-43 - - - -	294,069	10	12	147,035	13	4
1843-44 - - - -	319,045	12	6	164,723	15	8
1844-45 - - - -	178,461	8	12	139,229	5	6
1845-46 - - - -	348,886	29	8	174,443	6	1

Calpee Customs House, }
21 May 1846. }

(signed) G. Breton,
Deputy Collector.

(True copy.)

(signed) R. Lowther,
Commissioner.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 141

I.
Bengal and
North Western
Provinces.

STATEMENT of DUTY collected on Cotton at the *Calcutta* Custom House,
from 1818-19 to 1830-31.

SEASONS.	IMPORT DUTY.		EXPORT DUTY.		TOTAL DUTY.	
	Rs.	a. p.	Rs.	a. p.	Rs.	a. p.
1818-19	23,533	3 9	93,152	2 -	116,685	5 9
1819-20	17,510	11 3	61,586	11 9	79,097	7 -
1820-21	29,992	6 6	187,403	- 9	217,395	7 3
1821-22	26,844	3 3	127,146	9 9	153,990	13 -
1822-23	18,146	- 3	83,055	6 6	101,201	6 9
1823-24	12,603	- 9	106,199	2 -	118,802	2 9
1824-25	8,566	- -	61,307	4 7	69,873	4 7
1825-26	20,419	- 9	117,197	14 -	137,616	14 9
1826-27	7,213	- -	53,048	2 -	60,261	7 3
1827-28	4,706	- 6	53,183	15 3	57,889	15 9
1828-29	4,317	10 -	78,018	1 -	82,335	11 -
1829-30	84,058	3 6	32,105	15 3	116,164	2 9
1830-31	67,589	1 3	25,138	11 9	92,727	13 -

The records do not show what portion of the above was collected on cotton produced in the Doab. This is a point that should be ascertained before a correct conclusion can be arrived at.

Calcutta Custom House, }
21 May 1846.

(signed) G. Breton,
Deputy Collector.

(True copy.)

(signed) R. Lowther,
Commissioner.

STATEMENT of the extreme Prices of Cotton in the *Calcutta* Bazar during
the following Years :

1835 :	Rs. a. p.	Rs. a. p.	1837 :	Rs. a. p.	Rs. a. p.
January	15 2 - a'	16 12 -	July	- - - a'	- - -
February	17 - - "	14 12 -	August	- - - "	- - -
March	14 12 - "	15 - -	September	15 - - "	- - -
April	15 1 - "	15 15 -	October	16 8 - "	- - -
May	15 7 - "	15 12 -	November	15 - - "	14 6 -
June	16 - - "	- - -	December	14 7 - "	- - -
July	15 12 - "	15 13 -			
August	15 8 - "	- - -	1838 :		
September	15 8 - "	- - -	January	16 4 - "	16 - -
October	14 12 - "	- - -	February	15 8 - "	15 4 -
November	15 2 - "	- - -	March	14 8 - "	15 - -
December	15 9 - "	- - -	April	14 4 - "	14 - -
			May	13 12 - "	13 8 -
1836 :			June	13 - - "	- - -
January	15 2 - "	14 14 -	July	12 12 - "	- - -
February	14 10 - "	14 2 -	August	13 4 - "	- - -
March	14 4 - "	13 10 -	September	- - - "	- - -
April	13 10 - "	- - -	October	14 8 - "	16 - -
May	14 - - "	- - -	November	15 - - "	14 12 -
June	- - - "	- - -	December	16 8 - "	15 13 -
July	- - - "	- - -			
August	- - - "	- - -	1839 :		
September	11 14 - "	11 5 -	January	15 12 - "	15 - -
October	12 8 - "	12 - -	February	15 4 - "	- - -
November	12 12 - "	13 - -	March	15 2 - "	15 14 -
December	13 - - "	14 - -	April	16 - - "	- - -
			May	15 8 - "	- - -
1837 :			June	14 8 - "	14 4 -
January	13 8 - "	14 - -	July	- - - "	- - -
February	13 14 - "	13 12 -	August	- - - "	- - -
March	13 14 - "	13 8 -	September	14 4 - "	13 12 -
April	13 8 - "	- - -	October	14 8 - "	14 4 -
May	13 12 - "	- - -	November	15 8 - "	14 12 -
June	- - - "	- - -	December	14 4 - "	14 7 -

I:
Bengal and
North Western
Provinces.

STATEMENT of the extreme Prices of Cotton, &c.—*continued.*

1840:	Rs. a. p.	Rs. a. p.	1843:	Rs. a. p.	Rs. a. p.
January - -	14 8 - a'	13 8 -	March - -	10 12 - a'	10 1 -
February - -	13 8 - "	12 4 -	April - -	10 1 - "	9 10 -
March - -	12 - - "	11 4 -	May - -	9 14 - "	11 6 -
April - -	11 4 - "	13 - -	June - -	- - - "	- - -
May - -	11 11 - "	11 2 -	July - -	- - - "	- - -
June - -	- - - "	- - -	August - -	- - - "	- - -
July - -	- - - "	- - -	September - -	10 14 - "	10 10 -
August - -	14 4 - "	13 12 -	October - -	10 10 - "	11 8 -
September - -	14 11 - "	13 13 -	November - -	10 9 - "	9 11 -
October - -	15 4 - "	15 10 -	December - -	9 10 - "	8 3 -
November - -	15 11 - "	15 2 -			
December - -	15 2 - "	15 7 -			
			1844:		
1841:			January - -	8 7 - "	7 15 6
January - -	14 12 - "	15 - -	February - -	8 6 - "	9 2 -
February - -	15 - - "	17 - -	March - -	8 11 - "	9 14 6
March - -	16 14 - "	16 6 -	April - -	9 14 - "	9 10 -
April - -	16 14 - "	15 - -	May - -	9 12 - "	10 4 -
May - -	15 - - "	14 4 -	June - -	- - - "	- - -
June - -	- - - "	- - -	July - -	- - - "	- - -
July - -	- - - "	- - -	August - -	9 11 - "	9 14 -
August - -	- - - "	- - -	September - -	9 6 - "	9 8 -
September - -	12 4 - "	11 - -	October - -	9 2 - "	10 7 -
October - -	11 - - "	10 8 -	November - -	10 10 - "	12 8 -
November - -	10 4 - "	11 8 -	December - -	10 10 - "	11 14 -
December - -	11 8 - "	12 - -			
			1845:		
1842:			January - -	10 8 - "	10 11 -
January - -	12 12 - "	12 5 -	February - -	10 4 - "	9 7 -
February - -	12 7 - "	12 4 -	March - -	9 12 - "	9 4 -
March - -	12 4 - "	11 8 -	April - -	10 1 - "	10 6 -
April - -	12 12 - "	12 5 -	May - -	10 1 - "	10 9 -
May - -	12 12 - "	12 6 -	June - -	- - - "	- - -
June - -	- - - "	- - -	July - -	- - - "	- - -
July - -	- - - "	- - -	August - -	9 12 - "	- - -
August - -	- - - "	- - -	September - -	9 13 - "	10 6 -
September - -	- - - "	- - -	October - -	10 1 - "	11 12 -
October - -	12 12 - "	13 - -	November - -	11 14 - "	9 10 -
November - -	13 - - "	11 6 -	December - -	9 10 - "	9 - -
December - -	12 10 - "	10 2 -			
			1846:		
1843:			January - -	9 4 - "	9 12 -
January - -	10 - - "	12 12 -	February - -	9 9 - "	9 14 -
February - -	11 - - "	9 7 -	March - -	9 10 - "	11 - -
			April - -	11 2 - "	10 4 -
			May - -	9 14 - "	9 7 -

Calpee Custom House,
21 May 1846.

(signed) G. Breton,
Deputy Collector of Customs.

(True copy.)
(signed) R. Lowther,
Commissioner.

COPY of a Minute by Mr. H. H. Bell, addressed to Mr. C. Allen on the subject.

COPY of Mr. Hamilton Bell's Minute about Cotton, addressed to Mr. Charles Allen.

THE main points of the despatch, of which you sent me a copy, are the assumed reduction of cotton cultivation in Bundelcund; the opinion of the Court of Directors on the operations that have been relinquished, and their solicitude for the successful issue of any desirable experiment for the improvement of the cotton of this country, so as to render it in quality and condition suited to the demand of the British manufactures.

The Lieutenant-governor, I see, suspects that the assumed diminution is not confined to Bundelcund, but general, and the necessary result of larger importation of British piece goods and cotton twist, simultaneously with the almost cessation of export demand of the raw material, and the extinction of the extensive export trade formerly existing in the cotton manufacture of this country. And he considers this must have led to depressed prices, and, as a natural result, to reduced cultivation.

I am by no means quite satisfied that the fact is as surmised. With respect to Bundelcund, your report on Humeerpoor assigns very sufficient reasons for impaired agriculture generally in that unhappy province; the victim of zealous official avidity, and of the perhaps equally

equally afflicting visitations of drought in 1829, 1833, and 1837, a disastrous succession of calamities against which no agricultural population in India could possibly make head. You have well observed that Mr. Pidcock, whose reduction seems to have been just and liberal, undid his good work by his too rapidly progressing rising scale of land tax. The "*revocare gradum*," where once cultivation has been abandoned, is most arduous; the increase of taxation should be most gradual, and generally it should not be annual. A stop between each addition is desirable, and would be advantageous to all interested in the productive results of the cultivation. Your reductions show the still deteriorated condition of the zillah; and, as regards cotton, I have little doubt total produce is less there than it was 30 year ago, but I remark that the relation which this cultivation bears to the total of the khurreef crop is that generally assigned by the native cultivators as the usual proportion in the cotton districts. One-fourth of the khurreef is the full portion in cotton. Your tables exhibit rather more than 26 per cent., and Mr. Muir's tables give nearly the same result. This would justify my conjecture that it is not a declining cultivation, and this opinion leads me back for a good many years to support the impression I feel on this subject.

Cotton fabrics have immemorially formed the clothing of the people of India, and the production of the raw material must therefore have been regular and uniform, and its price exposed to few other fluctuations than might arise from failure of crops. It was a permanent cultivation, and must have paid the usual rate of profit, and probably no higher. I have not been able to get returns from merchants' books, on which I could depend, at any very early year in this century; but I perfectly remember, in conversation with a very respectable mahajun, who in his youth had traded largely in cotton to Lucknow, being told that from seven to nine rupees per maund were the usual prices, the first being considered cheap, and the latter dear. The rates of the present day are equal to this, and eight rupees per maund to the ryot, gives him under ordinary circumstances a fair profit, equal to the average on other crops, demanding similar labour and expense in the cultivation.

Up to the year 1802, the Bengal Presidency did not export cotton. In that, or 1803, I cannot speak with certainty, though I think 1802, the first shipment was made to the China market, and that trade rapidly increased; but it is manifest it had little effect on general prices; for in the Furuha Return, I gave to Mr. Thomason, which may be positively relied on as taken from the books of the dealings of a very respectable firm, eight and nine rupees are the prices and limits of fluctuations in 1807. The China trade, although in itself of importance to the commercial community of Calcutta, was of a steady and almost unvarying character, and too limited to exercise any material influence on the cotton market. Of late years the China market has been unfavourable, and the exports much lessened, and so far, *per se*, this implies a diminished demand on our production.

✓
See annexed
statement.

The charter of 1793 obliged the Company to provide for the public 3,000 tons of shipping at a freight of 15*l.* per ton, subject to increase in time of war, in such proportion as the Company might be themselves required to pay; but in Calcutta 25*l.* per ton might at that time be considered the rate at which privilege freight was saleable; and certainly cotton shipments at such charge were out of the question. On the altered terms of the renewed charter in 1814, freight fell gradually, but very considerably, and the American war about that period led to shipments of cotton to England. These influenced the market prices of the cotton in a degree quite disproportionate to their extent relatively to the entire production of the article. I imagine the most active demand must have been in 1816 and 1817. It was from the first a succession of dashing speculative operations—a question of timeous arrival contingent on our relations with America. Cost of production did not enter into the question of the price that was paid, demand and immediate supply being the only elements of calculation. The duration of these hazardous operations was too short to have had much influence even indirectly on the extent of production, though the natives who did not comprehend the grounds of the speculation, persevered in maintaining the bazar prices after the exciting cause had ceased; but in my opinion this had scarcely any effect, for little of the enhanced rates reached the ryot, being absorbed by the village bunneea, the dealer with the ryot, the more considerable trader to whom he sells, and the buyers in the great marts in which the latter realises his return; but so long as the ryot's price exceeds eight rupees per maund, cotton was a preferential cultivation, and as yet, with the exception of one year, which I cannot from memory particularise, I do not think any lower rate has been established. With reference to export to Europe, the cessation of the trade has undoubtedly withdrawn a considerable temporary demand on this staple product.

The export of India cotton piece goods was formerly a very important branch of trade. As regards Europe this is now nearly extinct, and I imagine that to the eastward islands it must be very greatly diminished, having probably been replaced by British manufactures. In so far as raw material was used in their manufacture, such demand must have ceased, certainly, and this must have also dried up another considerable source of consumption.

The danger to which I should look with the greatest apprehension, and which really seems advancing with great strides, and would ere now have had very decisive effects had it not been met by counterbalancing circumstances which still exist, is the rapidly increasing import of English cotton manufactures. These have already almost extinguished the finer native cotton fabrics, and they seem fast encroaching on the far more important, those which form the clothing of the mass of the population; though I have ascertained that as yet the coarsest fabrics are beyond English competition. Curious to determine this, I sent to England various patterns of cotton cloths, with details of their lengths, breadths, and usual weight per piece, and requested estimates of the lowest prices at which perfectly similar
could

I.
Bengal and
North Western
Provinces.

could be woven, and the English imitation patterns sent out in consequence showed me that equally cheap clothing of similar substance and strength could not be obtained at the same price. But every day increases the manufacturing power of England, and this struggle is, perhaps, only deferred. I have not touched upon cotton yarn, as I think it possible this enables the natives still to maintain some finer fabrics which they must have otherwise relinquished; but here the native raw material is displaced by America, and it is a very serious encroachment. It is, I understand, used in the warp; the softer Indian hand-spun thread supplying the woof.

I support my opinion of undiminished cotton cultivation in our own districts on several grounds. (It may be assumed as undeniable that in the North Western Provinces much more land is now under cultivation than was the case 30 years ago, and from all I can learn the usual proportion of one-fourth of the khurreef crop is still general.) I imagine we may consider the population considerably increased in the last 30 years, and although the superior and middle classes are certainly much impoverished, I believe the condition of the mass of the population improved.

My personal not inattentive observation extending locally over the last twenty-three years supports this impression. The wages of labour have certainly increased, and many old Kisans, with whom I constantly converse when out in the districts, have lamented to me the degeneracy and profusion of the present times, remarking that in their younger days the lower classes were exclusively fed with the inferior descriptions of grain, whereas now barley and even wheat have become the common food of the hired labourer. The improvidence of the native character is opposed to accumulation for any other purpose than marriage or religious ceremonies, in the agricultural class. They spend what they earn, and I conceive it is not an unfair assumption that those who feed better will seek better clothing. If they can afford to spend more on their food, we might conjecture they would appropriate more for their clothing; but if we were to consider the same amount as previously disbursed for their apparel, this would establish a vastly enlarged demand, and a proportionate increase of consumption of the raw material of their manufacture. (When I arrived in India in 1818, I was an extensive purchaser of piece goods for the Mediterranean market. Amongst other descriptions I may mention Allahabad sahris, which I notice as having the means of reference to their present price before me, for which I then paid 120s. per corye. The Calcutta price current now quotes these as from 42s. to 52s. It is manifest the same sum would buy double the quantity, for it should, perhaps, be noticed this is simply a plain white cloth unaffected by any change of fashion.) I should, however, properly remark that the very coarse cloths, as guzzy, have not materially varied within my observation, and I have been rather a large buyer for indigo seed bags and other similar purposes, for a good many years. Although the steadiness of this article may partially arise from the absence of competition, an uniformity of cost can alone account for an unenlarged production, and consequent equality of price. We are also still very large importers of cotton, as the custom-house books can establish. The cottons to the south-west are superior to our produce, and sell for better prices; but this must be more than counterbalanced by charges of transport; and these importations, if they are undiminished, could establish an increased consumption, as our export trade has nearly ceased. I am inclined, therefore, to think that my impression of undiminished internal production is not a mistaken one; but I should fairly tell you it is an opinion formed on the grounds I have noticed, and my judgment is open to your reflection; and it is a point on which I am by no means competent.

All this is very plain sailing; but we now come to that which, after all, is the main question where much must be conjectured, and only determinable by experiment, always more or less changeable. Can India compete with America, at all events, to such an extent as to afford a suitable cotton for common purposes, if not rivalling the superior growths of that country, and in what mode can the quality and condition of the produce be so improved as to render our cottons fitted for consumption in English manufactures? This embraces two points, quality and cost of production.

I take it now as quite settled that our experiments must be with indigenous cotton. I will never believe that a soil which can yield a cotton suitable for spinning into thread for the muslins of Dacca, and cloths of Chundehree, is unfit for the production of the average quality of American cotton; and this is what we want, at all events, in the first instance. I hold it quite certain that the first step is to find some quality which although not desirable, is still serviceable, and that this should be the first great aim; and I am inclined to hope that we have this in the Bagcheenee cotton, if sufficient attention can be given to its improvement. I think it far inferior to the Berareea, but that is not the cotton to begin with, as its cultivation would with great difficulty be enforced. It requires much water; the cotton pods are small, though its bearing is most prolific, and it comes late to maturity, and consequently runs greater risk from frost. It then remains to be seen whether in the cost of production we cannot more than compete with any slave cultivating country.

A late Government notice in the Jamaica Journal, in amendment of certain previous regulations as regards Indian emigrants into the island, has these conditions imposed on their employers.

The effective labour is restricted to eight hours per day.

Medical attendance and medicines gratis to emigrant and all his family.

A suitable dwelling and a quarter of an acre of land for a garden.

Rations weekly to every male and female emigrant above the age of eight years, the estimated value of which is 3s. 4d. per week.

Wages in money, besides varying with sex and age, rendering the weekly charge collectively

tively for an effective labourer, *i. e.*, male above 12 years of age, 6 s. 10 d., or Rs. 3. 5.; for a boy of eight years and older, 5 s. 8 d. or Rs. 2. 12. Now here there is no medicine, no dwelling, no garden grounds, no restrictions to eight hours, 11 being a fair average; and we can procure the same class of individuals on their native, and therefore most congenial soil, at from seven annas to ten annas per week, all the year round; and I ask if Jamaica can pay this heavy charge in competition with her neighbouring slave cultivators, how can we fear that India should fail in the struggle with any slave country in the production of articles common to both, and when there seems no reason for believing that any such material difference of average fertility of the soil exists as can compensate for the higher wages of labour? I admit that, as regards Jamaica, the sugar duties were unaltered when the above notice was published. What the effect of the new law may be is perhaps doubtful.

I have been particularly struck with a remark of Sir R. Peel's, in the debate on the sugar duties, that the gradual removal of all protective duties will ultimately lead to a contest between free and slave labour, and I think with him, that eventually the former will carry the day. It would be singular enough if we should owe to the relinquishment of an injudicious system of taxation the extinction of the iniquitous trade in human flesh, and all its attendant horrors, which direct legislation vainly attempted to suppress. It is India that can make the great struggle with the hope of success. A country abounding in free agricultural population, and with the exception perhaps of soil, exuberant in the vigour of untried fertility, as productive as any country under the sun, formidable as the contest would be, it is here that the battle may be boldly fought; for if India has great disadvantages from the apathy, inertness, absence of enterprise, and, above all, want of capital amongst the native agriculturist, it is, on the other hand, of all countries in the world the best suited for the trial, from the abundance of the population, the low wages of labour, and, above all, the submissiveness of the native character. I have little faith generally in statistical tables, often prepared by persons who if of an unquestionable good faith, are utterly unqualified to judge of the accuracy or value of the data on which their statements are founded; but if we might rely on Ure's book, the Doab lands are at least as productive as many of the cotton growing States of America, and if so, the antagonistic principles of free and slave labour meet on equal terms, if we can but find a cotton suitable for the British manufacturer.

I am obliged to say that I do not think the system adopted by the Honourable Company in sending out the American planters under Captain Bayles, was that from which important results could be expected. In my opinion the plan I have hitherto recommended is that which will best answer.

My opinion has always been, that these experiments do not belong to Government, and as a general principle, such is still my view. Individual exertion excited by the prospect of personal advantage, is the only healthy promoter of improvements, but there may, of course, be exceptions to the rule, and the measure I advocate is, I think, one of them. I am entirely persuaded, unaided native means and exertions will do nothing. It must be European vigour, foresight, and enterprise, that shall produce the desired result, and this cannot be successfully exercised in this measure unless the character of landlord and purchaser be conjoined. It is needless to advert to the causes which render it unlikely that within any short period, individuals thus circumstanced will be met within these provinces, and to postpone arrangements till then would be an adjournment *sine die*, so that I see the intervention of Government is essential to the prosecution of the measure I advocate; and although I will not venture to assert we must succeed, I still think the prospect encouraging. If I could have secured sufficient seed, I could this year have had 30,000 beegas (Cuicha) under cultivation, chiefly certainly in villages, either my own or under my influence, but many of my neighbours were ready to oblige me by making the trial, for my long residence amongst them has been productive of confidence and goodwill. My present idea is that when once it is established that we can send suitable cotton for the home market from hence, we shall find plenty of support in Liverpool merchants for the establishment of a Joint Stock Company for the maintenance of a cultivation that will give us peculiarly desirable returns for the trade in British manufactures, limited solely to the ability of India to pay for them, and I should be glad to see the government withdraw the instant their fostering support can be dispensed with, which I conceive it would be the instant we can show that India can really provide the raw material of the most important manufacture the world has ever seen.

We must get a cotton that will do, if not precisely such as we desire.

We must not interfere with the mode of cultivation at first further than by advice, which, however, no native will confide in and follow, but let the people follow their own custom.

In every village it will be desirable to have a *kayth* (field) of seer cultivation, conducted on the principle it is desired to introduce, but, in the first instance, the native tools should be used, and no other variation than dilling instead of broadcast, or any other mode of giving the plants room and air. I should be inclined, in some instances, to use the plan I verbally noticed, of sowing in small clumps of two or three plants, with an interval of three feet between them, as tried at Omer Gurh. The plants are fine and bushy, and promise well. I notice this incidentally, but in fact we must leave to time and experience for progress in improvement generally, and we must not attempt too much at once. The cultivation should be frequently visited when in bearing, the finest plants selected, and the produce kept separate for seed for future sowing; and a perseverance in this system will, I am persuaded, lead to great improvement in the quality. It is not impossible that by dispersing the *Berareea* plant in the *Bagheenee* *kayths*, some crops of them might be obtained, affording finer cotton than

I.
Bengal and
North Western
Provinces.

than the Bagcheenee and large bolls, and coming more quickly to maturity than the Berareea, as well as requiring less water, which is very important if irrigation becomes necessary. No Dessee cotton should be permitted to be cultivated so long as the Bagcheenee seed could be provided. This, of course, is not to be the result of authoritative restriction, but conditional on the agreement to make engagements for cultivation in any village desirous of contracting, and will not be very difficult. In no other way will pure unmixed kupas be obtained. The common Des-ee cotton must gradually be got rid of altogether, the carelessness and improvidence of the native character affording no security for their selection of the best seed; to teach them the importance of which will be one of the most difficult tasks. This cannot be better exemplified than in the very article I am noticing. Last year I had 800 beegas of Bagcheenee cotton in my villages, and when I found that Government were breaking up their establishment I gave this up to the ryots. They acknowledge that the produce exceeded the Dessee in quantity, that they sold it from one to two rupees per maund higher price, and yet they did not save an ounce of seed for this year's sowing. When abused for their stupidity, and want of reflection, the answer at once was, "How was I to feed my bullocks?" This is nonsense; for 20 seers would have sufficed for one individual's sowing, but it shows carelessness as well as poverty, and that alone they will do nothing.

Indigo is nearly an analogous case. From the remotest antiquity this dye has been prepared in India; but it is little more than 50 years since European attention was first turned to an article which by progressive steps has been carried to such perfection that it had become a Bengal monopoly, and remained so till extreme prices encouraged competition in other countries. With every example before them for many years, the natives, with some few exceptions in Bengal, did not follow that which was laid open to their view, and at this day amongst those in these provinces the manufacture retains its pristine inferiority. This is not quite a parallel case, certainly, as the improved manufacture necessitates a factory and considerable outlay; but it still supports my opinion of the vanity of expecting any advance from Indian intelligence and exertion.

The remarks in the despatch with reference to the conduct of past experiments, and especially as regards the cotton gins, seem to me perfectly just. That these machines did not succeed here was at once manifest, and had they not been worked by Americans, I should without hesitation have conjectured that they were mismanaged. Aware that in the Bombay Presidency they are in use in some instances, I wrote to a friend to procure me such accounts as I could rely on. A letter from a gentleman in charge of cotton gins at Broach remarks: "In reference to the inquiries about our saw-gins, I beg to state that those in use here are all large ones, none with less than 60 saws in them, and turned by bullock power (agricultural bullocks). Our cotton is not cut at all, and the proof is that in Liverpool it sells from one-quarter to one-half higher than the best Broach cotton, cleaned by the ordinary churka. There is no doubt of the saw-gins paying, provided the management is on ordinary common sense principles. Our 60 saw-gins clean off each per diem 1,970 lbs. of kupas, and the yield from this may be one-third, or 656½ lbs. This may be taken as the highest rate of yield, 33½ per cent.; 27 per cent. is the lowest I have met with here, and 28½ per cent. is the ordinary average. The number of bullocks for two gins is four pairs, and for a day's work we use six pairs, relieving two at the half day's work, but four pairs would be ample were not our gearing bad and heavy. A man to each pair of bullocks; one man or woman I employ to feed the gin; and a couple of children to supply kupas, and keep the flue clean in the cotton-room. Seeds, small ones, will occasionally get through the grates, but seldom, and this is easily prevented by altering the width of the grates."

I do not know that I need trouble you with further remarks; and you may consider much of what I have written superfluous, but I am sure you will attribute any prolixity to the real interest I take in a subject of such great national importance, and in which I shall gladly co-operate, hailing it as the first step in calling into activity the vast resources of this country, which have been too long allowed to remain dormant.

I should add, that I do not think the bazar prices, I mean of the great marts, will afford much assistance, but I will endeavour to obtain such as may be relied on for this place and Mirzapoor. The holidays have prevented me from seeing several of the great mahajuns, on whom I depend for correct information. They are generally so suspicious of motives that they reluctantly give trustworthy statements.

You will see, however, that the fluctuations have frequently been very great from very inadequate causes, and that they really afford no criterion of the rates paid to the producer, or of the extent of the production. Take indigo seed as an example. The ryot generally contracts at from 2½ rupees to 3½ rupees per maund about August and September. If you were to inquire the bazar rates,—Furruckabad, Cawnpore, and Mirzapoor are the great marts,—nothing is more likely than that they might open at five or six rupees, vary to 7 or 10 rupees, and often much higher, but this scarcely at all affects the ensuing year's rates, or the extent of land left for seed crops; and I think the same of cotton as regards the cultivation.

(signed) *H. Hamilton Bell.*

8 October 1846.

(True copy.)

(signed) *C. Allen.*

MINUTE

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 147

I.
Bengal and
North Western
Provinces.

STATEMENT showing the Market Price of Corron (current in the Shop of Jewahir Mull and Oomed Roy, Bunneas of Mouzah Furuha, Pergunnah Moostufabad, Zillah Mynpoory) during the following Years.

Christian Year.	Sumbut or Native Year.	Price per Maund during the Month of					Lowest Price.	Highest Price.
		Katick.	Aghun.	Poos.	Magh.	Phagoon.		
		Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.
1807	1864	8	9 8	9	9	8 12	8	9 8
1808	1865	9	10	9	9	8 14	8 14	10
1809	1866	12	10	9 8	10	9 12	9 8	12
1810	1867	11 8	11 4	11	11 8	12	11	12
1811	1868	15 4	15	15 10	14 12	15 8	14 12	15 10
1812	1869	13	14 1	11 8	11	10	10	14 1
1813	1870	9 8	9 4	9	8 8	8	8	9 8
1814	1871	9	9 4	8	8 8	8 8	8	9 4
1815	1872	8	8 4	8 6	8	7 12	7 12	8 6
1816	1873	10	11 4	13 8	14	15 8	10	15 8
1817	1874	11	13	15	15 8	16	11	16
1818	1875	12 8	14 8	15	16	15 12	12 8	16
1819	1876	13 8	14	13	13 4	13 8	13	14
1820	1877	16	15 8	13	13	14	13	16
1821	1878	16 4	15 12	12 8	13	14	12 8	16 4
1822	1879	12	12	11 8	11 12	11 4	11 4	12
1823	1880	13 4	13	14 6	14 8	14 4	13	14 8
1824	1881	13	14	13 4	13	12 12	12 12	14
1825	1882	14 9	13 6	11 12	10 8	10	10	14 9
1826	1883	12	12 4	11	10	9	9	12 4
1827	1884	10 4	10	9	9 4	9 4	9	10 4
1828	1885	11 12	12	11 8	9 12	11 8	9 12	12
1829	1886	10 4	10	9 12	9	8 8	8 8	10 4
1830	1887	10	8 8	8 4	8 8	9	8 4	10

Remarks.—The Furuha cotton maund is 510 old Sicca rupees to the Punseree, and is consequently equal to 1m. 9s. 2c. Co.'s weight.

21st of Kowar, Sumbut 1903.

MINUTE by the Honourable the Lieutenant-Governor of the North Western Provinces.

MINUTE.

No. 72.

THESE papers have been shown to Mr. Bell, and his memorandum on the subject contains much interesting matter regarding the cultivation of cotton in this part of the country. I am disposed to concur in Mr. Bell's opinion, that the cultivation of cotton has not decreased, but that the increased consumption of cotton manufactures has taken off all that was before exported, and has kept pace with the increasing import. Every inquiry goes to prove that the people are more numerous than they were, and are much better clothed.

(signed) J. Thomason,
Lieutenant-Governor North Western Provinces.

Ordered, that the correspondence noted above be placed on record with the foregoing Minute.

Agra, 7 November 1846.

(signed) J. Thornton,
Secretary to Gov. North Western Provinces.

Ordered, that the subject of the above communication be reported in the narrative of the quarter for the information of the Honourable the Court of Directors.

I.
Bengal and
North Western
Provinces.

EXTRACT from Revenue Narrative, No. 3, dated 8 October 1853.

COTTON.

Extent of cotton
cultivation in the
North Western
Provinces.

Para. 16, Nar.
No. 3 of 1849.
Revenue proceed-
ings, May 1853,
No. 147 to 150.

Para. 59. The Government of Bombay having requested information as regards the extent of cotton cultivation in the North Western Provinces, the Lieutenant-governor in reply transmitted, for the purpose of being laid before the Right Honourable the Governor in Council, copies of documents on the subject, as noted in the margin.* His Honor remarked that the nature of the land revenue settlements in these provinces precluded the Government from exercising any direct influence as to the species of crop to be sown. The choice was entirely given up to the zemindars and the cultivators of the soil. The estimates now furnished of the extent of land under cotton cultivation at two periods within the last few years were made with considerable difficulty. Such estimates could not be regularly and periodically furnished.

EXTRACT from Revenue Narrative, No. 3, dated 10 October 1849.

COTTON.

Cost and extent
of cultivation of
cotton in India.

Para. 50, Narr.
No. 2 of 1848.
Revenue proceed-
ings, April 1849,
No. 245 to 308.

Para. 16. Conformably to orders, dated 12th February 1848, the Board submitted Reports received from the Commissioners, regarding the cost and extent of cultivation of cotton in India, as also a general statement prepared in their office, exhibiting the information supplied from all the districts on the subject. These returns were duly forwarded to the Secretary to the Government of India.

EXTRACT from the Proceedings of the Honourable the Lieutenant-Governor of the North Western Provinces, in the Revenue Department, dated 12 May 1843.

(No. 2003 of 1853.)

No. 147.

From *F. Hume*, Esq., Secretary to the Government of Bombay, to *W. Muir*, Esq., Secretary to the Government of the North Western Provinces, Agra; dated Bombay Castle, 5 April 1853.

Sir,

Territorial depart-
ment revenue.

I HAVE been directed by the Right Honourable the Governor in Council to forward a copy of the papers, as per margin,† and to request that you will, with the permission of his Honor the Lieutenant-governor, favour this Government with the information therein referred to as regards the extent of cotton cultivation in the North Western Provinces.

2. A form of the return furnished by the collectors under this Presidency is appended.

I have, &c.

(signed) *F. Hume*,
Secretary to the Government.

* Statement showing the extent of land cultivated with cotton in the collectorates of the North Western Provinces, and its probable yield for the year. Extent of cotton cultivation in the several districts of the North Western Provinces. Letter from Secretary Sudder Board of Revenue, North Western Provinces, No. 92, dated 27th February 1849.

† From the Secretary of the Chamber of Commerce, No. 72, dated 25th October 1852. Reply to ditto. dated 10th November 1852, No. 7,294.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 149

(No. 72 of 1852.) -

From *J. Cannon*, Esq., Secretary to the Chamber of Commerce, to *A. Malet*, Esq., Chief Secretary to the Government of Bombay, dated Bombay, 25th October 1852.

I.
Bengal and
North Western
Provinces.

Sir,
REFERRING to para. 3 of Mr. Secretary Goldsmid's letter to the Chamber of Commerce, No. 80 of 1851, and dated 4th January of that year, wherein a promise was held out that Government would endeavour to ensure the preparation of statements on a uniform system for every cotton growing district, showing the extent of land cultivated with indigenous and foreign seed cotton, the number of churkas and gins, and the prospects of the season, &c. &c., which statements Government was then pleased to say should be published in the Government Gazette, I am now directed by the Committee of the Chamber respectfully to request the renewed attention of the Right Honourable the Governor in Council to this subject. I am further desired to point out the importance, in the execution of the above-mentioned design, of including all the native States which contribute to the supply of cotton exported from Bombay to that Government, and the public may be informed on a subject of such vast and equal interest to both,—the extent of cotton cultivation throughout the country.

Should there be no statistics already collected in the other Presidencies, and now available, the Committee of the Chamber suggests that those relating to this Presidency and foreign states adjacent should be made public. In the meantime the statistics of cotton growing in Berar and the Nizam's dominions generally are particularly desired.

Bombay Chamber of Commerce,
25 October 1852.

I have, &c.
(signed) *John Cannon*, Secretary.

(No. 7294 of 1852.)

From *A. Malet*, Esq., Chief Secretary to Government of Bombay, to *J. Cannon*, Esq., Secretary to the Chamber of Commerce, Bombay.

Sir,
I HAVE been directed by the Right Honourable the Governor in Council to acknowledge the receipt of your letter (No. 72), dated the 25th ultimo, and to state for the information of the Chamber of Commerce, that the several collectors under this Presidency have been directed immediately to forward to Government the returns relative to the extent of cotton cultivation therein referred to for the current season.

Letters to the col-
lectors, dated
4 November 1852.

2. Government also hope to receive, at an early date, approximate returns from the political agents, Southern Mahratta country and Kolapoor; but the results of references already made lead his Lordship in Council to apprehend that the political officers in the northern parts of the Presidency will not be able to furnish any statements.

3. An application will be made to the Government of Madras and the Resident at the court of his Highness the Nizam, for information of the description obtained from the collectorates under this Presidency.

Bombay Castle, 10 November 1852.

I have, &c.
(signed) *A. Malet*,
Chief Secretary of Government.

(True copies.)

(signed) *F. Hume*,
Secretary to the Government.

STATEMENT showing the Extent of Land cultivated with Indigenous and Exotic Cotton in the Collectorate, and its probable Yield in Candies of 784 lbs. for the Year.

ZILLA.	Land Planted with Cotton.			Probable Produce in Candies of 784 lbs.		
	Acres or Beeghas Exotic.	Acres or Beeghas Indigenous.	TOTAL.	Exotic.	Indigenous.	TOTAL.
When Beeghas are entered, the number of square yards in each should be stated.						

I.
Bengal and
North Western
Provinces.

STATEMENT showing the Extent of Land cultivated with Cotton in the Collectorates of the North Western Provinces, and its probable Yield for the Year.

DIVISION.	ZILLAHS.	Land planted with Cotton.	Probable Produce per Acre, in Maunds, Seers, Chittaks.	
			Cleaned.	Uncleaned.
		Acres.	Mds. s. c.	Mds. s. c.
Delhie - - -	Bhutteeana - - -	—	—	—
	Paneeput - - -	14,820	- - -	8 34 2
	Hissar - - -	9,271	- - -	5 35 3
	Delhie - - -	3,321	1 3 1	—
	Rohtuk - - -	14,552	2 32 0	—
	Goorgaon - - -	29,617	1 23 0	4 39 5
	TOTAL - - -	71,581	1 19 6	6 22 14
Meerut - - -	Dehra Dhoon - - -	16	—	—
	Seharunpoor - - -	80,637	- - -	5 35 10½
	Moozuffernugger - - -	15,601	- - -	5 4 1
	Meerut - - -	23,046	- - -	3 6 4
	Boolundshuhur - - -	14,505	2 33 0	—
	Allygurh - - -	69,050	1 4 2	3 13 7
	TOTAL - - -	1,52,855	1 38 9	4 14 13½
Kumaon - - -	Kumaon - - -	260	—	—
	Gurwal - - -	—	—	—
	TOTAL - - -	260	—	—
Rohilkund - - -	Bijnour - - -	19,039	2 1 0	—
	Moradabad - - -	50,000	2 16 0	—
	Budaon - - -	34,091	- - -	4 15 0
	Bareilly - - -	29,711	1 12 8	4 15 0
	Shahjehanpoor - - -	7,160	0 21 4	2 4 8
		TOTAL - - -	1,40,001	1 22 11
Agra - - -	Muttra - - -	1,03,042	2 8 0	—
	Agra - - -	87,000	1 15 0	—
	Furruckabad - - -	14,148	2 0 0	—
	Mynpoorie - - -	29,290	- - -	9 16 7
	Etawah - - -	49,676	1 1 2	3 2 14
	TOTAL - - -	2,83,156	1 26 3	6 9 11
Allahabad - - -	Cawnpoor - - -	1,01,111	2 0 0	6 0 0
	Futtenpoor - - -	29,745	- - -	3 11 0
	Humeerpoor - - -	66,841	0 33 9	—
	Banda - - -	1,02,852	1 1 3	—
	Allahabad - - -	27,689	1 25 9	—
	Calpee - - -	21,049	1 17 8	5 4 6
	TOTAL - - -	3,49,287	1 15 9	4 31 13
Benares - - -	Goruckpoor - - -	1,300	0 20 0	2 20 0
	Azingurh - - -	307	—	—
	Jounpoor - - -	17,032	—	—
	Mirzapoor - - -	5,766	- - -	2 10 0
	Benares - - -	1,967	- - -	1 8 0
	Ghazepoor - - -	1,649	—	—
	TOTAL - - -	28,021	0 20 0	3 29 0
	Acres - - -	10,23,161	—	—

EXTENT of Cotton Cultivation in the several Districts of the North Western Provinces.

DIVISION.	DISTRICT.	ACRES.	DIVISION.	DISTRICT.	ACRES.
Delhie - -	Bhutteeana - -	—	Agra - -	Muttra - -	1,03,990
	Paneeput - -	25,319		Agra - -	1,00,015
	Hissar - -	8,334		Furruckabad - -	29,412
	Delhie - -	4,238		Mynpoorie - -	26,608
	Rohtuk - -	20,973		Etawah - -	13,020
	Goorgaon - -	29,492		TOTAL - -	2,73,045
	TOTAL - -	88,356			
Meerut - -	Dehra Dhoon - -	16	Allahabad - -	Cawnpoor - -	1,01,111
	Seharunpoor - -	17,572		Futtehpoor - -	39,379
	Moozuffernugger - -	17,300		Humeerpoor - -	78,524
	Meerut - -	6,672		Banda - -	2,30,557
	Boolundshuhur - -	22,867		Allahabad - -	77,459
	Allygurh - -	85,624		TOTAL - -	5,27,030
	TOTAL - -	1,50,051			
Kumaon - -	Kumaon - -	260	Benares - -	Goruckpoor - -	4,158
	Gurwal - -	—		Azimghur - -	307
	TOTAL - -	260		Jounpoor - -	17,032
Rohilkund - -	Bijnour - -	18,570		Mirzapoor - -	5,766
	Moradabad - -	33,532		Benares - -	6,557
	Budaon - -	34,091		Ghazeepoor - -	8,135
	Bareilly - -	29,711		TOTAL - -	41,955
	Shahjehanpoor - -	17,661	Saugor - -	Saugor - -	47,920
	TOTAL - -	1,33,565		Jubulpoor - -	26,473
		Hoshungabad - -		50,915	
		Nursingpoor - -			TOTAL - -

The following letter is written to the Secretary to the Government of Bombay:

(No. 1798 of 1853.)

No. 150.

From *W. Muir*, Esq., Secretary to the Government of the North Western Provinces, Agra, to *H. E. Goldsmid*, Esq., Secretary to the Government of Bombay.

Sir,

Revenue Dept.

I AM directed to acknowledge the receipt of your letter, No. 2,003, dated the 5th ultimo, requesting information as regards the extent of cotton cultivation in the North Western Provinces, and in reply, to transmit to you, for the purpose of being laid before the Right Honourable the Governor in Council, the accompanying copies of documents on the subject as noted in the margin.*

2. The Lieutenant-governor desires me, at the same time, to remark that the nature of the land revenue settlement in these provinces precludes the Government from exercising any direct influence as to the species of crop to be sown. The power of choosing what crops shall be sown is entirely given up to the zemindars and the cultivators of the soil.

3. The estimates now furnished of the extent of land under cotton cultivation, at two periods within the last few years, were made with considerable difficulty; such estimates cannot be regularly and periodically furnished.

I have, &c.
(signed) *W. Muir*,
Secy. to the Govt. for the N. W. P.

Agra, 12 May 1853.

* Statement showing the extent of land cultivated with cotton in the collectorates of the North Western Provinces, and its probable yield for the year. Extent of cotton cultivation in the several districts of the North Western Provinces. Letter from Secretary, Sudder Board of Revenue, No. 92, dated 27th February 1849.

I.
Bengal and
North Western
Provinces.

Revenue Department, 18 May (No. 3) 1847.

Our Governor of the Presidency of Fort William in Bengal.

(Circular.)

Cotton.

PARA. 1. WE desire that you will cause to be prepared, for transmission to us with the least possible delay, a statement of all the expenses that have been incurred under your Presidency for promoting the improvement of the cultivation of cotton since the arrival of the American planters, up to 30th April last showing also any sums that may have been received for sales of cotton or cotton seed produced on the Government farms, or from the use of machinery, or on any other account.

2. We desire that a similar statement may be transmitted to us annually at the close of the official year.

We are, &c.

(signed) *H. St. George Tucker,*
J. L. Lushington,
&c. &c.

London, 18 May 1847.

Home Department Revenue (No. 9) of 1848.

To the Honourable the Court of Directors of the East India Company.

Honourable Sirs,

Rev. Cons. 17 July
1847, No. 5 to 7.
Rev. Cons. 13 May
1848, No. 5 to 7.

WE have received from the Government of Bengal the accompanying statement, showing the expenses incurred on account of the experimental cultivation of cotton under the American cotton planters, from the first arrival in Bengal to 30th April 1847, as called for by your Honourable Court in your Despatch to that Government, No. 3, of 1847, of the 18th May.

Rev. Cons. 31 July
1847, No. 1.
Rev. Cons. 21 Aug.

2. We have requested the Lieutenant-governor of the North Western Provinces to expedite the statement for those provinces, as required by your Honourable Court in your despatch to our address of the same number and date.

We have, &c.

(signed) *Dalhousie.*
T. H. Maddock.
F. Millett.
J. H. Littler.

Fort William, 13 May 1848.

(No. 339.)

From the Under Secretary to the Government of Bengal to the Under Secretary to the Government of India, Home Department; dated Fort William, 10 May 1848.

Revenue.

Sir,

I AM directed by the Right Honourable the Governor of Bengal to forward, for transmission to the Honourable Court of Directors, the accompanying copy of a letter, No. 221, from the officiating extra Assistant to the Accountant, Government of Bengal, dated the 27th ultimo, with enclosure, showing the cost of the experimental cotton cultivation introduced under this Government.

I have, &c.

(signed) *W. Seton Karr,*
Under Secy. to the Govt. of Bengal.

(No. 221.)

From *W. Maples, Esq.*, Officiating Extra Assistant Accountant to the Government of Bengal, to *F. J. Halliday, Esq.*, Secretary to the Government of Bengal.

Sir,

IN obedience to the orders of Government conveyed in Mr. Officiating Under Secretary Grey's letter to the address of the Accountant of the 12th July last, I have the honour to submit the statement as per margin.*

2. The

* Statement showing the receipts and disbursements on account of the experimental cotton cultivation, under American cotton planters, from their first arrival in Bengal to 30th April last.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 153

2. The annual statements on account of the cotton cultivation in the Bengal Presidency will be submitted at the close of each official year as desired.

I.
Bengal and
North Western
Provinces.

Fort William,
Accountant's Office, Revenue Department,
27 April 1848.

I have, &c.
(signed *W. Maples*,
Officiating Extra Assist. Accountant,
Government of Bengal.

STATEMENT showing the RECEIPTS and DISBURSEMENTS on account of Experimental Cotton Cultivation under American Cotton Planters, from their first arrival in Bengal to 30 April 1847, required in Mr. Under Secretary Grey's letter of the 12th July 1847.

R E C E I P T S.

— None. —

DISBURSEMENTS.		<i>Rs.</i>	<i>a.</i>	<i>p.</i>	<i>Rs.</i>	<i>a.</i>	<i>p.</i>	<i>Rs.</i>	<i>a.</i>	<i>p.</i>
In 1843-44 :										
Salary of J. O. Price, Superintendent of the experimental cotton cultivation, from 26th August 1843 to February 1844, at 360 rupees - - - -		2,229	10	10						
Ditto - - ditto - - for March 1844 - - - -		450	-	-						
					2,679	10	10			
Travelling and dawk expenses to Dacca - - - -					414	4	-			
								3,093	14	10
In 1844-45 :										
Salary of J. O. Price from April 1844 to March and part of April 1845, at 450 rupees - - - -					5,650	-	-			
Salary of F. J. Terry, cotton planter, from April 1844 to February 1845, at 250 rupees - - - -		2,750	-	-						
House-rent of F. J. Terry, cotton planter, from April 1844 to February 1845, at 30 rupees - - - -		330	-	-						
Travelling allowance of ditto - - - -		40	-	-						
Salary and house allowance of F. J. Terry, as cotton planter, from 1st March to 7th April 1845, at 280 rupees - - - -		345	5	4						
Tent and deputation allowance of ditto for 14 days of September 1844, at 5 rupees per day - - - -		70	-	-						
Ditto - for 15 days of October 1844, at ditto - - - -		75	-	-						
Ditto - for 10 days of November 1844, at ditto - - - -		50	-	-						
Ditto - for 18 days of February 1845, at ditto - - - -		90	-	-						
Paid to Messrs. J. Spence & Co. for the accommodation of Mr. F. J. Terry - - - -		87	2	4						
Paid to Mr. F. J. Terry on account of passage-money to New York, and expenses from thence to the city of Nantze in the State of Mississippi, United States, also travelling expenses from Rungpore to the Presidency - - - -		2,140	-	-						
Expenses incurred on account of farming implements purchased for the experimental cotton farm, Dacca, including transport charges - - - -		540	6	-						
					6,517	13	8			
								12,167	13	8
In 1845-46 :										
Salary of J. O. Price, Government cotton planter, from part of April 1845 to February 1846, at 450 rupees - - - -		4,700	-	-						
Contingencies under ditto from January 1845 to February 1846 - - - -		2,506	13	5						
					7,206	13	5			
Establishment under F. J. Terry, cotton planter, from 1st to 6th April 1845 - - - -		3	15	6						
Ditto - - ditto - for May 1845 - - - -		19	13	6						
Ditto - - ditto - from June to October 1845, at 20 rupees - - - -		100	-	-						
Ditto - - ditto - from November to March 1846, at 26 rupees - - - -		130	-	-						

I.
Bengal and
North Western
Provinces.

DISBURSEMENTS— <i>continued.</i>		Rs. a p.	Rs. a p.	Rs. a p.
In 1845-46— <i>continued</i>				
House rent from 1st to 6th April 1845, and from June to March 1846, at 30 rupees		306	-	-
Ditto ditto for May 1845		20	-	-
Contingencies		355	-	-
			934	13
Amount value of double and single iron horse ploughs, including freight, &c.			1,128	9 5
				9,270 3 5
In 1846-47 :				
Salary of J. O. Price, Government cotton planter, from March 1846 to February 1847, at 450 rupees			5,400	-
Establishment under ditto, from March 1846 to February 1847, at 42 rupees		504	-	-
Ground-rent		32	-	-
Cooley hire		942	5	6
Charges for cattle-minder		29	-	-
Ditto for carpenters', &c. work		101	8	-
Boat-hire		39	2	-
Charges for keeping elephants		119	2	-
Purchase of bags for keeping cotton		3	11	6
Ditto of oil cakes		10	-	-
Ditto of arsenic for killing rats in the godown		1	-	-
Rent of lands occupied by the cotton farm		93	12	-
Ground-rent of lands cultivated with cotton		23	7	2
Purchase of stationery		4	-	-
Purchase of cotton seeds		14	8	-
Advanced to individuals for cultivating cotton		222	8	-
Ditto to Mr. Price on account of Ryutty cotton cultivation		307	11	11
			2,447	12 1
EXPORT WAREHOUSE:				
January 1847, charges on Dacca cotton		1	2	6
February 1847 - ditto - ditto		4	12	-
			5	14 6
				*7,853 10 7
TOTAL			Co's. Rs.	32,385 10 6

* The difference of Rs. 331. 3. 1. between this result and that exhibited in the statement furnished under date the 20th July last, is owing to the latter having reference to expenditure incurred at Dacca only, and to immaturity in the state of the adjustments of this office at the time alluded to.

(Errors excepted.)

Fort William,
Accountant's Office, Revenue Department,
27 April 1848.

(signed) *W. Maples,*
Officiating Extra Assistant Accountant,
Government of Bengal.

(True copies.)

(signed) *W. Seton Karr,*
Under Secy. to the Govt. of Bengal.

Government of Bengal, Revenue.—No. 16 of 1849.

To the Honourable the Court of Directors of the East India Company.

Honourable Sirs,

In accordance with the instructions contained in your Honourable Court's revenue despatch, No. 3, of the 18th May 1847, I have the honour to transmit the annual statement of receipts and disbursements on account of the experimental cotton cultivation under American planters in Bengal for the year 1847-48.

Fort William, 4 June 1849.

I have, &c.
(signed) *J. H. Littler.*

21 July 1849.

(signed) *Frederick James Halliday,*
Secretary to the Government of India.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 155

(No. 13.)

From *W. Maples*, Esq., Assistant Accountant, Government of Bengal, to *J. P. Grant*, Esq., Secretary to the Government of Bengal.

I.
Bengal and
North Western
Provinces.

Sir,

WITH reference to the orders of Government as contained in the second paragraph of Revenue Proceedings Mr. Officiating Under Secretary Grey's letter to the address of the Accountant, dated the 12th July 1847, I have the honour to submit the annual statement as per margin.*

I have, &c.
(signed) *W. Maples*,

Fort William, Accountant's Office,
Revenue Department, 25 May 1849.

Assistant Accountant, Government of Bengal.

STATEMENT, showing the RECEIPTS and DISBURSEMENTS on account of Experimental Cotton Cultivation under American Cotton Planters, in Bengal, for the Year 1847-48, required in Mr. Officiating Under Secretary Grey's Letter, No. 535, dated 12th July 1847.

RECEIPTS.			Rs.	a.	p.		
Sale proceeds of Tattees, &c. of the cotton field	-	-	-	-	-	10	-
DISBURSEMENTS.							
			Rs.	a.	p.		
Salary of J. O. Price, Government cotton planter, from March 1847 to March 1848, at 450 per mensem	-	-	5,850	-	-		
Expenses incurred in repairing a cart, iron wheel and pinion	10	-	-	-	-		
Contingencies for Neej cotton cultivation from March 1847 to February 1848	-	-	1,990	12	4		
Contingencies for Ryutee cotton cultivation from March to October 1847	-	-	496	11	11		
			Rs. 2,487	8	3		
Deduct amount adjusted in 1847-48, but included in last year's disbursements	-	-	307	11	11		
			2,179	12	4		
			2,189	12	4		
						8,039	12 4
Expenses incurred in packing a maund of cotton seeds sent from Cuttack to Chittagong	-	-	-	-	-	4	11 10
Freight on four bags of cotton seeds imported from Madras	-	-	-	-	-	20	- -
						Rs. 8,064	8 2

(Errors excepted.)

Fort William, Accountant's Office,
Revenue Department, 25 May 1849.

(signed) *W. Maples*,
Assistant Accountant, Government of Bengal.

No. 19 of 1850.—Government of Bengal, Revenue Department.

To the Honourable the Court of Directors of the East India Company.

Honourable Sirs,

IN continuation of my despatch in this department, No. 16, of the 4th June 1849, I have the honour to forward, for the information of your Honourable Court, the accompanying copy of a communication from the Assistant Accountant to Government, No. 34, dated the 15th instant, submitting the annual statement, showing the receipts and disbursements on account of the experimental cotton cultivation under American planters in Bengal for the official year 1848-49.

2. Your

* Annual Statement, showing the receipts and disbursements on account of the experimental cotton cultivation under American cotton planters, in Bengal, for the year 1847-48.

I,
Bengal and
North Western
Provinces.

2. Your Honourable Court will perceive that Mr. Maples, in his statement, shows no receipts for the year under report, but Mr. Mytton, in the statement for the Dacca farm, annexed to his letter, No. 296, of the 1st December last, addressed to the Sudder Board of Revenue, shows the return of the year's growth as marked at 800 lbs., which, with what remained in hand (3,840 lbs.) of the previous years might amount at the bazar rate of 2 annas per lb. to 580 rupees.

Fort William, 23 August 1850.

I have, &c.
(signed) *J. H. Littler.*

Revenue Pro-
ceedings.

(No. 34.)

From *W. Maples, Esq.*, Assistant Accountant, Government of Bengal, to *J. P. Grant, Esq.*, Secretary to the Government of Bengal.

Sir,

With reference to the orders of Government as contained in the second paragraph of Mr. Officiating Under Secretary Grey's letter to the address of the accountant, dated the 12th July 1847, I have the honour to submit the annual statement as per margin.*

I have, &c.
(signed) *W. Maples,*
Fort William, Accountant's Office, Assistant Accountant, Government of Bengal.
Revenue Department, 15 August 1850.

STATEMENT, showing the RECEIPTS and DISBURSEMENTS on account of Experimental Cotton Cultivation under American Cotton Planters, in Bengal, for the Year 1848-49, required in Mr. Officiating Under Secretary Grey's Letter, No. 535, dated 12th July 1847.

R E C E I P T S.

— None. —

DISBURSEMENTS.	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.
Salary of J. O. Price, Government cotton planter of Dacca, from April 1848 to March 1849, at 450 per mensem - - -	5,400	-	-									
Contingencies under ditto - - - - -	247	13	4									
Contingencies under ditto, for Neej cotton cultivation from March 1848 to March 1849 - 1,429 11 -												
Ditto under ditto, for Ryotes ditto, from ditto to ditto - - - - -	2,284	7	-									
	Rs. 3,714	2	-									
Deduct former years - - - 517 15 4				3,196	2	8	8,841	-	-			
Contingencies incurred in Chittagong - - - - -							2	3	-			
Salary of J. H. Mather, civil engineer, superintending the Government cotton experiment from 21st October 1848 to March 1849, at 400 per mensem - - - - -							8,846	3	-			
Amount advanced to ditto for the construction of cotton cleaning machines at the Iron Bridge-yard, at Allipore, as per Government orders, dated 16th December 1848 - - - - -				2,141	15	-						
				4,000	-	-	6,141	15	-			
										14,988	2	-

(Errors excepted.)

Fort William, Accountant's Office,
Revenue Department, 15 August 1850.

(signed) *W. Maples,*
Assistant Accountant, Government of Bengal.

* Annual Statement, showing receipts and disbursements on account of the experimental cotton cultivation under American cotton planters, in Bengal, for the official year 1848-49.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 157

Government of Bengal, Revenue,—No. 11, of 1851.

To the Honourable the Court of Directors of the East India Company.

Honourable Sirs,

IN continuation of my despatch in this department, No. 19, of the 23d August 1850, I have the honour to forward, for the information of your Honourable Court, the accompanying copy of a communication from the Assistant Accountant to Government, No. 92, dated the 12th instant, submitting the annual statement, showing the receipts and disbursements on account of the experimental cotton cultivation under American planters in Bengal, for the official year 1849-50.

Fort William, 18 July 1851.

I have, &c.
(signed) *J. H. Littler.*

I.
Benga' and
North Western
Provinces.

(No. 92.)

From the Assistant Accountant to the Government of Bengal to *J. P. Grant, Esq.,*
Secretary to the Government of Bengal.

Sir,

WITH reference to the orders of Government, contained in the 2d paragraph of Mr. Officiating Under Secretary Grey's letter to the address of the Accountant, dated 12th July 1847, I have the honour to submit the statement as per margin.*

I have, &c.
(signed) *W. Maples,*
Assistant Accountant to the Government of Bengal.

Fort William,
Assist. Acct.'s Office, Revenue Department.
12 July 1851.

STATEMENT, showing the RECEIPTS and DISBURSEMENTS on account of Experimental Cotton Cultivation under American Cotton Planters in Bengal, for the Year 1849-1850, required in Mr. Officiating Under Secretary Grey's Letter, No. 535, dated 12th July 1847.

RECEIPTS.

— None. —

DISBURSEMENTS.		Rs. a. p.	Rs. a. p.	Rs. a. p.
Salary of J. O. Price, Government cotton planter at Dacca, from April 1849 to March 1850, at 450 rupees	- - - - -	5,400	- -	
Contingencies under ditto for Neej cotton cultivation, from April 1849 to January 1850	- - - - - 993 6 3			
Ditto under ditto for Ryotee ditto, from April to July, and September 1849 to January 1850	- - - - - 427 15 1			
	Rs. 1,421 5 4			
Deduct former years	- - - - - 247 13 4			
		1,173	8 -	
Value of a cotton saw-gin issued from the Arsenal in December 1849 to the Commissioner of Dacca, for the Government cotton farm at that place †.			6,573	8 -
Salary of J. H. Mathur, civil engineer, superintending the Government cotton experiments, from April 1849 to March 1850, at 400 rupees	- - - - -	4,800	- -	
Amount advanced to ditto for the construction of cotton cleaning machines at the Iron Bridge-yard at Allipore, as per Mr. Under Secretary Grey's letter, dated 11th August 1849, in the Home Department	- - - - -	2,000	- -	
			6,800	- -
				13,373 8 -

(Errors excepted.)

Fort William,
Accountant's Office, Revenue Department,
12 July 1851.

(signed) *W. Maples,*
Assistant Accountant, Government of Bengal.

* Annual statement, showing receipts and disbursements on account of the experimental cotton cultivation under American cotton planters in Bengal, for the official year 1849-1850.

† Value not known; *vide* accompanying copy of a letter from the Officiating Secretary to the Military Board, No. 2,333, dated 3d July 1851.

I.
Bengal and
North Western
Provinces.

(Copy.)

(No. 2,333.)

From Lieut. *J. P. Beadle*, Officiating Secretary, to the Assistant Accountant, Government of Bengal.

Ordnance Dept.

Sir,
IN reply to your letter, No. 39, of the 25th ultimo, I am directed by the Military Board to inform you that the value of the cotton saw-gin in question is not known in this department, as advised in letters to the Accountant, Military Department, Nos. 4,081 and 4,110, of the 16th November 1850.

I have, &c.

(signed) *J. P. Beadle*,
Officiating Secretary.

Fort William,
Military Board Office,
3 July 1851.

(True copy.)

(signed) *W. Maples*,
Assist. Acct. Govt. of Bengal.

Government of Bengal, Revenue.—No. 16 of 1852.

To the Honourable the Court of Directors of the East India Company.

Honourable Sirs,

I HAVE the honour, in continuation of the despatch in this department, No. 11, of the 18th July 1851, to forward, for the information of your Honourable Court, the accompanying copy of a communication from the Assistant Accountant to Government, No. 94, dated the 3d instant, submitting the annual statement, showing the receipts and disbursements on account of the experimental cotton cultivation under American planters in Bengal, for the official year 1850-51.

2. The transmission of these statements will now cease, as your Honourable Court will have learned from the Revenue despatch from the Government of India, in the Home Department, No. 13, dated the 27th ultimo, that the experimental cotton cultivation in Assam has been abandoned, and the services of Mr. Price, the superintendent, dispensed with.

I have, &c.

(signed) *Dalhousie*.

Fort William,
25 September 1852.

Revenue Pro-
ceedings.

(No. 94.)

From the Assistant Accountant, Government of Bengal, to *C. Beadon*, Esq., Secretary to the Government of Bengal.

Sir,

WITH reference to the orders of Government contained in the 2d paragraph of Mr. Officiating Under Secretary Grey's letter to the address of the Accountant, dated the 12th July 1847, I have the honour to submit the statement as per margin.*

I have, &c.

(signed) *W. Maples*,
Assist. Acct. Govt. of Bengal.

Fort William,
Accountant's Office, Revenue Department,
13 September 1852.

* Annual statement, showing receipts and disbursements on account of experimental cotton cultivation under American cotton planters in Bengal, for the official year 1850-51.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 159

I.
Bengal and
North Western
Provinces.

STATEMENT, showing the RECEIPTS and DISBURSEMENTS on account of Experimental Cotton Cultivation under American Cotton Planters in Bengal, for the Year 1850-51, required in Mr. Officiating Under Secretary Grey's Letter, No. 535, dated 12th July 1847.

RECEIPTS.		Rs. a. p.	Rs. a. p.	Rs. a. p.
Refunded charges - - - - -		54	10	-
Sale proceeds of nine bullocks - - - - -		55	-	-
Ditto - ditto of small bungalow - - - - -		20	-	-
Ditto - ditto of small pony - - - - -		12	-	-
Ditto - ditto of cotton - - - - -		186	14	9
				328 8 9
DISBURSEMENTS.				
Salary of J. O. Price, Government cotton planter at Dacca, for April and May 1850, at 450 rupees - - - - -		900	-	-
Contingencies under ditto - - - - -		16	9	-
			916	9 -
Salary of J. O. Price, Government cotton planter at Luckimpore, from June 1850 to January 1851, at 450 rupees - - - - -		8,600	-	-
Amount advanced to ditto - ditto, on 6th December 1850 - - - - - Rs. 75 - - -				
Amount advanced to ditto - ditto, on 18th December 1850 - - - - - 200 - - -				
Amount advanced to ditto - ditto, on 14th February 1851 - - - - - 150 - - -				
Amount advanced to ditto - ditto, on 30th April 1851 - - - - - 100 - - -				
		525	-	-
			4,125	- -
Salary of J. H. Mather, civil engineer, superintending Government cotton experiments, for April 1850 - - - - -			400	- -
				5,441 9 -
				5,113 - 3
				Excess of Charges - Rs.

(Errors excepted.)

(signed) W. Maples,

Assistant Accountant, Government of Bengal.

Fort William,
Accountant's Office, Revenue Department,
13 September 1852.

Government of Bengal, Revenue.—No. 15 of 1853.

To the Honourable the Court of Directors of the East India Company.

Honourable Sirs,

I HAVE the honour, in continuation of the despatch in this department, No. 16, of the 25th September 1852, to forward, for the information of your Honourable Court, the accompanying copy of a communication from the Assistant Accountant to Government, No. 161, dated the 24th ultimo, submitting the annual statement of receipts and disbursements on account of the experimental cotton cultivation under American planters in Bengal, for the official year 1851-52.

I have, &c.

Fort William, 3 September 1853.

(signed) Dalhousie.

(No. 161.)

From the Assistant Accountant, Government of Bengal, to C. Beadon, Esq., Secretary to the Government of Bengal.

Sir,

WITH reference to the orders of Government contained in the 2d paragraph of Mr. Officiating Under Secretary Grey's letter to the address of the Accountant, dated the 12th July 1847, I have the honour to submit the statement as per margin.*

I have, &c.

(signed) W. Maples,

Assist. Acct. Govt. of Bengal.

Fort William,
Accountant's Office, Revenue Department,
24 August 1853.

* Statement showing the receipts and disbursements on account of experimental cotton cultivation under American cotton planters in Bengal, for the year 1851-52.

I.
Bengal and
North Western
Provinces.

STATEMENT showing the RECEIPTS and DISBURSEMENTS on account of Experimental Cotton Cultivation under American Cotton Planters in Bengal, for the Year 1851-52, required in Mr. Officiating Under Secretary Grey's Letter, No. 535, dated 12th July 1847.

RECEIPTS.

— None. —

DISBURSEMENTS.	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.
Salary of J. O. Price, Superintendent, Government cotton cultivation at Luckimpore, from February to October 1851, at 450 rupees per mensem - - -	4,050	-	-						
Ditto of an assistant under ditto - ditto, from 21st January to 31st May 1851, at 50 rupees per mensem	216	10	8						
Ditto of a Buikundauze, from 1st July to 31st December 1850, at 5 rupees per mensem - - -	30	-	-						
Boat-hire for bringing farming implements and cotton seeds from Dacca to (Debroghur) Luckimpore -	156	-	-						
Expenses incurred on account of a shed to store cotton, &c. - - - - -	11	8	-						
Expenses incurred in bringing J. H. Mather's cleaning machine from Gowhatty to Luckimpore - - -	3	-	-						
Bamboos for making machans for cotton - - -	1	-	-						
Petty contingencies - - - - -	-	8	-						
Cloth for bags - - - - -	1	-	-						
				4,469	10	8			
Cart-hire, &c., for conveyance of cotton seeds from Cura Gola Ghat to Punkabarry - - - - -				43	12	-			
							Co's. Rs.	4,513	6 8

(Errors excepted.)

Fort William,
Accountant's Office, Revenue Department,
24 August 1853.

(signed) *W. Maples,*
Assistant Accountant, Government of Bengal.

Home Department; Revenue.—No. 14 of 1848.

To the Honourable the Court of Directors of the East India Company.

Honourable Sirs,

WITH reference to Para. 2 of our despatch, No. 9, dated the 13th May last, we have now the honour to transmit the accompanying statement, showing the expenses incurred on account of the experimental cultivation of cotton in the North Western Provinces.

We have, &c.
(signed) *Dalhousie.*
F. Millett.
J. H. Littler.

Fort William, 15 July 1848.

(No. 3,447 of 1848.)

From *C. Allen, Esq.*, Officiating Secretary to Government, North Western Provinces, to *G. A. Bushby, Esq.*, Secretary to the Government of India, Home Department, Fort William.

Sir,

Revenue Department.

IN continuation of my letter, No. 3,402, to your address, dated the 21st instant, I am directed by the Honourable the Lieutenant-governor to transmit to you, for the purpose of being laid before the Right Honourable the Governor-General of India in Council, the accompanying copy of a letter No. 1,073, from the Assistant Accountant, North Western Provinces, dated the 15th instant, submitting statement of expenses incurred on account of the cultivation of cotton in the North Western Provinces.

Agra, 24 June 1848.

I have, &c.
(signed) *C. Allen,*
Officg. Sec. to Govt. N. W. P.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 161

(No. 1, in No. 3,447 of 1848.) (No. 1,073, 1840 to 1846-7.)

From A. Shakespear, Esquire, Assistant Accountant, North Western Provinces, to C. Allen, Esquire, Officiating Secretary to Government of the North Western Provinces, in the Revenue Department.

I.
Bengal and
North Western
Provinces.

Sir,

WITH reference to my letter, No. 939, of the 12th instant, I have the honour to submit the statement of cotton charges therein promised.

Accountant's Office, Agra,
15 June 1848.

I have, &c.
(signed) A. Shakespear,
Asst. Acct., N. W. P., in Charge.

(True copy.)

(signed) C. Allen,
Offg. Sec. to Govt., N. W. P.

(No. 2, in No. 3,447 of 1848.)

STATEMENT of Charges on account of the Experimental Cotton Cultivation, as entered on the General Books of the North Western Provinces, from the 1st of May 1842 to the 30th of April 1847.

General Journal for 1842-43, pages 150. 188, and 608 to 612.		Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.
Charges prior to the 1st of April 1842, viz.:										
Tentage and travelling charges of planters	- - - - -	758	1	10						
Purchase of six hand gins	- - - - -	2,850	-	-						
Wages of labourers, feed of cattle, &c.	- - - - -	533	14	- $\frac{1}{2}$						
					4,141	15	10 $\frac{1}{2}$			
Charges incurred from 1st April 1842 to 31st March 1843, viz.:										
Salary of Captain Bayles, superintendent of cotton plantations, from 1st of April to 21st June 1842, at 800 rupees	- - - - -	2,160	-	-						
Deduct military pay at Rs. 121. 12.	- - - - -	328	11	7						
					1,831	4	5			
Salary, tentage, and horse allowance of Messrs. Terry, Blount and Finnie, cotton planters, from 1st April 1842 to 31st March 1843, at 360 rupees each per mensem	- - - - -	12,960	-	-						
Ditto of R. Mercer, from 1st April to 8th December 1842, at 360 rupees	- - - - -	2,972	14	6						
Ditto of H. Frost, engineer, from 1st February to 31st March 1843, at 250 rupees	- - - - -	Rs. 500	-	-						
Deduct advanced him in London	- - - - -	120	-	-						
					380	-	-			
					18,144	2	11			
Sudder establishment from 1st April 1842 to 28th February 1843, at 459 rupees										
Somairpore ditto, from April to December 1842, at different rates	- - - - -	5,049	-	-						
Chouk ditto ditto from ditto	- - - - -	1,277	3	6						
Kotra Mukundpore ditto ditto	- - - - -	1,080	-	-						
Rath and Humeerpore ditto ditto	- - - - -	1,332	8	1						
					797	-	8			
					9,535	12	3			
Temporary establishment of the Sudder station, from July to December 1842	- - - - -				29	13	2			
Hire of ploughmen and coolies during the season	- - - - -				6,492	15	6			
Feed of cattle during the year	- - - - -				5,162	11	11 $\frac{1}{2}$			
Contingent charges for the same period	- - - - -				1,890	8	9			
Godown and office-rent at the Sudder station, from 1 April 1842 to 31 January 1843	- - - - -				1,300	-	-			
Purchase of cattle for the use of the plantations	- - - - -				14,186	10	9			
Ditto of tents for the cotton-planters, and superintendent's office	- - - - -				1,265	-	-			
Ditto of carts, plough and other implements	- - - - -				3,288	4	4			
Compensation to Mr. Mercer, cotton planter, for property destroyed in the disturbances in Bundlekund	- - - - -				2,000	-	-			
Amount advanced to Captain Bayles under the authority of Government	- - - - -				3,000	-	-			
Travelling charges incurred by the superintendent and planters in visiting other districts	- - - - -				906	5	-			
Ditto, ditto of the civil surgeon, for attendance on the planters	- - - - -				148	-	-			
					71,492	4	6			
General Journal for 1843-44, pages 159, 160. 255. 651. 749 to 752, and 299.										
Charges incurred from 1st April 1843 to 31st March 1844, viz.:										
Salary of J. Finnie, cotton planter, from 1st April 1843 to 31st March 1844, at 250 rupees, and horse allowance at 30 rupees	- - - - -	3,360	-	-						
Tentage allowance of ditto, from 1st April 1843 to 31st October 1843, at 80 rupees	- - - - -	560	-	-						

General Journal for 1843-44, &c.— <i>continued.</i>						
	<i>Rs.</i>	<i>a.</i>	<i>p.</i>	<i>Rs.</i>	<i>a.</i>	<i>p.</i>
Charges incurred from 1 April 1843 to 31 March 1844— <i>contd.</i>						
Salary, tentage, and horse allowance of J. Blount, cotton planter, for April 1843	360	-	-			
Salary and horse allowance of T. J. Terry, cotton planter, from 1st April 1843 to 28th February 1844, at 280 rupees	3,080	-	-			
Tentage allowance of ditto, from April to September 1843, at 80 rupees	480	-	-			
Salary of H. Frost, engineer, from 1st April 1843 to 31st March 1844, at 250 rupees	3,000	-	-			
Arrears of 1842-43	120	-	-			
	3,120	-	-			
Travelling charges incurred by the planters and engineer, in progress from Calcutta, and in visiting other districts				10,960	-	-
Fitting up an old nuzzool building for the accommodation of the cotton planter and engineer at Agra				1,882	8	8
Engineer's establishment of carpenters and blacksmiths, from August 1843 to March 1844				2,035	12	-
Purchase of a hand gin				375	4	-
Ditto of carts at Rs. 8,396. 2. 10., and various implements, Rs. 943. 10. 11½.				475	-	-
Soomairpoor establishment, from January 1843 to February 1844, at different rates	1,288	2	7	9,339	13	9½
Chouk ditto, from ditto to April 1843, ditto	390	12	8			
Kotra Mukundpore, from ditto to ditto, ditto	755	15	11½			
Ruth and Humeerpore, from January to December 1843 ditto	655	-	8			
Agra establishment, from May 1843 to February 1844, ditto	2,131	6	2			
Goruckpore ditto, from 8th March 1843 to 31st January 1844, ditto	1,162	1	9			
Hire of ploughmen and coolies during the season				6,363	7	9½
Feed of cattle during the year				2,679	11	1½
Contingent charges for the same period				2,696	9	10
				3,663	10	1½
General Journal for 1844-45, pages 136, 137. 675 and 732.						
Charges incurred from 1 April 1844 to 31 March 1845, viz.:						
Salary and horse allowance of T. J. Finnie, cotton planter, from 1st April 1844 to 13 March 1845, at 280 rupees	3,197	6	6			
Salary and horse allowance of T. J. Terry, cotton planter, for March 1844	280	-	-			
Ditto - ditto of J. Blount, cotton planter, from May 1843 to January 1845, at 280 rupees	5,880	-	-			
Tentage allowance of ditto, from May to October 1843, at 80 rupees	480	-	-			
Salary of H. Frost, engineer, from 1st April 1844 to 31st March 1845, at 250 rupees	3,000	-	-			
Arrears for August 1843	250	-	-			
	3,250	-	-			
Engineer's establishment from April 1844 to February 1845, at 106 rupees	1,272	-	-	13,087	6	6
Somairpoor establishment for March and April 1844	78	5	2			
Goruckpore ditto, from February 1844 to January 1845	1,116	10	8			
Agra establishment, from March 1844 to February 1845	1,436	10	3			
Temporary establishment entertained for the protection of gin houses				3,903	10	1
Hire of ploughmen and coolies during the season				453	4	10
Feed of cattle during the year				955	10	1
Contingent charges for the same period				572	8	10
Travelling charges incurred by the planters and engineers in visiting the out-stations and other districts				1,609	4	-
House-rent allowed to Mr. Blount, cotton planter, whilst stationed at Goruckpore, from February to December 1844, at 80 rupees				1,613	6	-
Expenses incurred in repairing gin houses				330	-	-
Ditto ditto in constructing ditto at Agra, Balo, Kosee and Hatrass				1,496	13	9
Purchase of two cotton screws				488	14	9
Cost of materials for making a railway, and boring apparatus				450	-	-
Ditto - ditto for constructing machinery for various purposes				126	1	-
Cost of constructing a four-bullock power mill				670	-	-
				500	-	-
General Journal for 1845-46, pages 198, 199. 336. 796.						
Charges incurred from 1 April 1845 to 31 March 1846, viz.:						
Salary of H. Frost, engineer, from 1st April to 31st July 1845, at 250 rupees						
Dawk, expenses of ditto, from Agra to Calcutta	1,000	-	-			
Passage-money of ditto to England	398	-	-			
Ditto, ditto of T. J. Finnie, cotton planter, to America	1,000	-	-			
	2,868	10	8			
Salary of A. M'Kenzie, engineer, for June 1845	80	-	-			
Ditto, ditto from July 1845 to March 1846, at 150 rupees	1,350	-	-			
	1,430	-	-			
				6,636	10	8
				40,491	13	3½
				26,257	5	10

General Journal for 1845-46, &c.—continued.		Rs.	a.	p.	Rs.	a.	p.
Charges incurred from 1 April 1845 to 31 March 1846—continued.							
Travelling charges of A. M'Kenzie, engineer, for visiting gin houses at other stations -		290	-	-			
Engineer's establishment from March 1845 to March 1846, at 110 rupees -		1,430	-	-			
Temporary ditto, from ditto to February 1846 -		1,432	5	8			
Hire of coolies at the gin houses in different localities -		1,279	12	2			
Feed of cattle during the year -		1,930	8	-			
Purchase of bullocks -		483	-	-			
Contingent charges during the year -		1,510	9	8			
Purchase of cotton for cleaning and screwing -		17,300	13	9			
Cost of packing and despatching 486 bales of cotton to Calcutta, including boat-hire and insurance charges -		1,548	14	5			
Repairing and constructing gin houses -		1,925	1	6			
					35,827	11	10
Charges incurred at Agra from 1 April 1846 to 31 March 1847 :							
Salary of A. M'Kenzie, engineer, from April to December 1846, at 150 rupees -		1,350	-	-			
Engineer's establishment from April to December 1846, at 165 rupees -	Rs. a. p.	1,485	-	-			
Ditto for January 1847 -		85	-	-			
		1,570	-	-			
Purchase of cotton for cleaning and screwing -		17,565	2	2			
Charges incurred in despatching 242 bales of cotton to Mirzapore, and 835 bales to Calcutta, including hackery and boat-hire, &c. -		4,586	9	4			
Repairing and constructing gin houses -		208	3	6			
Repairing and working cotton gin at Kosee -		236	8	9			
Feed of cattle during the year -		887	2	6			
Temporary establishment -		1,099	-	1			
Purchase of bullocks -		50	-	-			
Hire of coolies employed on the cotton works -		606	8	9			
Contingent charges during the year -		861	5	2			
					29,020	8	3
DEDUCT :							
Credited at Agra in 1843-44 :							
Amount advanced for purchase of bullocks refunded -		900	-	-			
Credited at Allahabad in 1843-44 :							
Planter's travelling allowances refunded -		130	-	-			
Ditto tentage - ditto - ditto -		155	-	-			
					1,185	-	-
Credited at Agra in 1844-45 :							
Sale of cattle -		958	7	-			
Ditto cotton seeds -		300	-	-			
Credited at Humeerpoor in 1844-45 :							
Sale of surplus food -		258	5	9			
Ditto of cattle -		857	15	9			
Ditto of implements -		295	12	6			
Damages recovered in an action at law -		327	13	6			
					2,998	6	6
Credited at Agra in 1845-46 :							
Sale of cotton seeds -		386	3	-			
Contingent charges refunded -		1,288	11	5			
					1,674	14	5
Credited at Agra in 1846-47 :							
Amount of a policy of insurance on 80 bales of cotton -		2,538	-	-			
Sale of cotton seeds -		4,656	9	6			
Amount received for screwing 836 bales of cotton -		1,463	-	-			
Sale of gunny bags -		65	8	-			
					8,723	1	6
					14,581	6	5
Net Charges to 31st March 1847, Company's Rs.					1,88,508	5	3½

Accountant's Office, N. W. P., Agra,
15 June 1848.

(signed) *A. Shakespear,*
Asst. Acct., N. W. P.

(True copy.)
... (signed) C. Allen,
Offg. Sec. to Govt. N. W. P.

I.
Bengal and
North Western
Provinces.

Government of Bengal Revenue (No. 6 of 1854).

To the Honourable the Court of Directors of the East India Company.

Honourable Sirs,

I HAVE the honour, in continuation of the despatch in this department, No. 15, of the 3d September 1853, to forward, for the information of your Honourable Court, the accompanying copy of a communication from the Assistant Accountant to Government, No. 602, dated the 28th of March last, submitting the annual statement of receipts and disbursements on account of the experimental cotton cultivation under American planters in Bengal for the official year 1852-53.

I have, &c.

Fort William, 10 May 1854.

(signed) *Fred. Jas. Halliday.*

(No. 602.)

From Assistant Accountant, Government of Bengal, to the Secretary to the Government of Bengal, dated Fort William, the 28th March 1854.

Sir,

WITH reference to the orders of Government contained in the second paragraph of Mr. Officiating Under Secretary Grey's letter to the address of the Accountant, dated 12th July 1847;

I have the honour to submit the statement as per margin.*

I have, &c.

Fort William,
Accountant's Office, Revenue Department,
28 March 1854.

(signed) *W. Maples,*
Assistant Accountant,
Government of Bengal.

STATEMENT showing the Receipts and Disbursements on account of Experimental Cotton Cultivation under American Cotton Planters in Bengal, for the Year 1852-53, required in Mr. Officiating Under Secretary Grey's letter, No. 533, dated 12th July 1847.

RECEIPTS:				Rs.	a.	p.	
Received from C. H. Lushington, Esq., Secretary to the Board of Revenue, amount sale proceeds of 25 bales of Assam cotton				236	4	3	
DISBURSEMENTS:		Rs.	a.	p.	Rs.	a.	p.
Salary of J. O. Price, Superintendent of Cotton Plantation at Luckinpoore, from November 1851 to March 1852, at 450 per month		2,250	-	-			
Contingencies under ditto		790	3	6			
					3,040	3	6
Ditto of - - ditto ditto ditto of ditto at Durrung, from April to 25th September 1852, at 450 per month		2,625	-	-			
Contingencies under ditto		119	9	-			
					2,744	9	-
Charges for removing implements of the cotton farm at Dacca						8	-
Value of cotton seeds received from Madras					117	11	2
					5,002	15	8
	Excess of Charge				5,666	11	5

(Errors excepted.)

Fort William,
Accountant's Office, Revenue Department,
28 March 1854.

(signed) *W. Maples,*
Assistant Accountant, Government of Bengal.

* Statement showing the receipts and disbursements on account of experimental cotton cultivation under American cotton planters in Bengal, for the year 1852-53.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 165

Revenue Department, 18 May (No. 3) 1847.

Our Governor-General of India in Council,

Para. 1. WE desire that you will call on the Lieutenant-governor of the North Western Provinces, to cause to be prepared, for transmission to us, a statement of all the expenses which have been incurred in the provinces subject to his authority, for promoting the improvement of the cultivation of cotton, since the date of the arrival of the American planters, up to the 30th April last, showing also any sums that may have been received for sales of cotton, or cotton seed produced on the Government farms, or from the use of machinery or on any other account.

2. We desire that a similar statement may be transmitted to us annually at the close of the official year.

We are, &c.

London, 18 May 1847.

(signed) *H. St. G. Tucker.*
J. L. Lushington.
&c. &c.

I:
Bengal and
North Western
Provinces.

Cotton.

Revenue Department, 14 July (No. 4) 1847.

Our Governor of the Presidency of Fort William in Bengal.

PARA. 1. THE paragraphs referred to in the margin* report your proceedings connected with the experimental cotton cultivation of dates subsequent to those noticed in our despatch of the 21st January (No. 1) 1846.

2. We regret that the failure of Mr. Terry's health, and his consequent return to America, rendered it necessary to abandon all operations in the district of Rungpore. From the information by him we think that there were reasonable grounds for anticipating a favourable result, and we shall be glad to learn that, at a future period, means may be found for attempting to improve the cotton of this district. We notice with satisfaction the interest taken in the experiment by Mr. Welby Jackson, the Commissioner.

3. The accounts of the proceedings in the Dacca district, under Mr. Price, are far from encouraging. The want of success in the cultivation of the foreign descriptions of cotton does not appear to be owing to unfitness of soil or climate, but to the ravages of insects, which destroy a large proportion of the pods. It is yet to be ascertained whether these visitations recur periodically, and whether it may not be possible, by changing the time of sowing, to escape the mischief which they have hitherto caused.

4. With respect to the saws for cotton gins, mentioned in your letter of the 2d October (No. 18) 1845, which arrived when you had no mechanic at your disposal competent to set them up, we think it desirable, if they should be still in store, that you should ascertain from the Government of Bombay whether they might not be usefully employed at the cotton establishments at Broach or Dharwar.

We are, &c.

London, 14 July 1847.

(signed) *H. St. G. Tucker.*
J. L. Lushington,
&c. &c.

Cotton.

* Letter dated 13th June (No. 7) 1845, p. 28; letter dated 22 August (No. 16) 1845, pp. 46 to 48, 55, 56; letter dated 2d October (No. 18) 1845, whole; letter dated 27th December (No. 20) 1845, pp. 59 and 60; letter dated 13th April (No. 6) 1846, pp. 32 to 34; letter dated 29th July (No. 12) 1846, p. 25; letter dated 4th August (No. 13) 1846, p. 2; letter dated 24th September (No. 15) 1846, p. 26.

I.
Bengal and
North Western
Provinces.
15th, or Dacca
Division.

EXTRACT Revenue Letter from Bengal, dated 28 November (No. 19) 1846.

23. ANNEXED* will be found Mr. Price's reports on the experimental cotton cultivation at Dacca for the months of June and July last.

EXTRACT Fort William Revenue Consultations, 5 August 1846.

No. 4.

From Officiating Secretary to the Sudder Board of Revenue to *F. J. Halliday*, Esq., Secretary to the Government of Bengal; dated Fort William, 29 July 1846.

Mis. Dept.
Present:
J. Lewis and
E. M. Gordon,
Esqrs.

Sir,

I AM directed by the Sudder Board of Revenue to request that you will submit, for the consideration of his Honour the Deputy Governor, the accompanying letter, No. 117, dated 17th instant, and its enclosure, from the Commissioner of Dacca, regarding Mr. Price's labours in the experimental cultivation of cotton during the month of June last.

I have, &c.
(signed) *G. Plowden*,
Officiating Secretary.

No. 5.

From *J. Dunbar*, Esq., Commissioner of Dacca, to the Sudder Board of Revenue, Fort William.

Gentlemen,

IN forwarding Mr. Price's report for the month of June last, I have the honour to inform your Board that I visited the experimental farm at Toke the day before yesterday, on my way back from Mymensingh. In those places where the caterpillars had committed their ravages, only a sickly plant was to be seen here and there, but in other places the cotton looked remarkably healthy. It was for the most part in flower, and if the weather continues favourable, I think a good return may reasonably be looked for some months hence.

Commissioner's Office, Dacca Division,
Dacca, 17 July 1846.

I have, &c.
(signed) *J. Dunbar*,
Commissioner of Revenue.

(No. 71 of 1846.)

From *J. O. Price*, Esq., Government Cotton Planter, to *J. Dunbar*, Esq., Commissioner of Dacca.

Sir,

I HAVE the honour of submitting to you, for the information of the Honourable the Deputy Governor of Bengal, the monthly report of my proceedings for the month of June.

2. The growth of the plant has been very rapid this month, and particularly so on the red soil, otherwise there is nothing connected with the neej cultivation worth trespassing on your time with, the proceedings on the tarna having been much the same as that of last month; neither has there been any with respect to the ryuttee cotton cultivation, not having yet received any seed to supply the persons with that required it; indeed, the expectation of the immediate arrival of some for all the month is the cause of my not being able to report any further respecting it than that I have received very favourable information from Tagooreeah of the cotton plants that were not destroyed by caterpillars or otherwise, and also from Foolbarriah of the lands that have been replanted with seed taken from cotton grown on the small patch of land that I have frequently in my reports mentioned, having planted immediately after my arrival in this district; but should I not in a few days receive seed, I will proceed to the several places at which it has been tried, and supply them, as far as in my power, with seed taken from cotton grown on the farm, although in the present instance I cannot well spare it.

3. Agreeable

* Rev. Proceedings, 5th August 1846, Nos. 4 and 5; Rev. Proceedings, 25th August 1846, Nos. 30 and 31.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 167

3. Agreeable to your wish, as well as that of my own, I have got in preparation several parcels of cotton of different kinds for the purpose of sending to England to obtain the opinion of the manufacturers of it, and likelihood of its meeting with advantage the European market.

Toke Government Farm,
8 July 1846.

Commissioner's Office, Dacca Division,
Dacca, 17 July 1846.

I have, &c.
(signed) *J. O. Price*,
Government Cotton Planter.

I.
Bengal and
North Western
Provinces

EXTRACT Fort William Revenue Consultations, 26 August 1846.

(No. 266.)

From the Officiating Secretary to the Sudder Board of Revenue to *F. J. Halliday*, Esq., Secretary to the Government of Bengal, Revenue Department, Fort William, 21 August 1846.

Sir,
I AM directed by the Sudder Board of Revenue to request that you will submit, for the consideration and orders of the Honourable the Deputy Governor, the accompanying letter in original, No. 131, dated the 4th instant, from the Commissioner of Dacca, together with its enclosure, regarding Mr. Price's experimental cultivation of cotton during the month of July last.

I have, &c.
(signed) *Geo. Plowden*,
Officiating Secretary.

No. 30.
Mis. Dept.
Present:
J. Lewis and
E. M. Gordon,
Esqrs.

(No. 131.)

From the Commissioner of Dacca to the Sudder Board of Revenue, Fort William.

No. 31.

Gentlemen,
I HAVE the honour to transmit copy of Mr. Price's report without date, No. 79, of his proceedings for the month of July, upon which it does not appear necessary to make any remark.

Commissioner's Office, Dacca Division,
Dacca, 4 July 1846.

I have, &c.
(signed) *J. Dunbar*,
Commissioner of Revenue.

(No. 79.)

From *J. O. Price*, Esq., Government Cotton Planter, Dacca, to *J. Dunbar*, Esq., Commissioner of Dacca.

Sir,
I HAVE the honour to submit to you, for the information of the Honourable the Deputy Governor of Bengal, the monthly report of my proceedings for the month of July.

2. The coolies for the greater part of this month have continued to be employed in preparing land and planting cotton seed, and the remainder of it in weeding and moulding the young plants; the cotton generally this month does not appear so healthy as it did in last month, a great number of the leaves on the plants having withered as if blighted; this has likely been occasioned by the sudden change from intense rain to that of heat, accompanied with very drying winds (so much so, that on my return from visiting the ryottee cultivation I found all the cultivated lands as dry and hard as they usually are in November); but I am in hopes the plants will soon resume their former healthy appearance.

3. On the 12th instant I proceeded to visit the ryottee cultivation, and I regret to inform you that at Tagoreah, which I mentioned in my last report having had favourable accounts of, I found partly under water, and the remainder of the soil on which it is planted so saturated with water, that the plants were fast changing from a healthy to a very unhealthy appearance; part of the lands at Sueypoor and Foolbarreah, being high, have not suffered from the inundation, and the cotton continues to look healthy. As soon as the water recedes a little I will supply the persons that have not wrought out all the advances made to them with fresh seed, and select lands, if possible, free from inundation.

4. The cotton wool, which I had the pleasure of mentioning to you my having in preparation to forward to you for exportation, I will not be able to deliver for a short time longer;
296—Sess. 2. X 4

168 PAPERS RELATING TO MEASURES TAKEN SINCE 1847

I.
Bengal and
North Western
Provinces.

longer; this delay is, occasioned principally by the spin-wheel of the gin breaking when ginning it, so that I will now have to extract the seed either by the small churka or by hand picking, either of which is very tedious.

Commissioner's Office, Dacca Division,
Dacca, 4 August 1846.

I have, &c.
(signed) *J. O. Price,*
Government Cotton Planter.

EXTRACT Revenue Letter from Bengal, dated 24 March (No. 7) 1847.

15th or Dacca
Division.

32. I FORWARD,* annexed, Mr. Price's reports on the experimental cotton cultivation at Dacca, for the months of August and October last. The one for September was forwarded with the letter to the Secretary, India House, dated the 27th January

EXTRACT from the Proceedings of the Government of Bengal, in the Revenue Department,
dated 21 October 1846.

No. 58.

(No. 323.)

From Officiating Secretary to the 'Sudder Board' of Revenue, to *F. J. Halliday, Esq.,*
Secretary to the Government of Bengal, Revenue Department, dated Fort William,
15 October 1846.

Sir,

Mis. Dept.
Present:
J. Lewis and
E. M. Gordon,
Esqrs.

I AM directed by the Sudder Board of Revenue to request that you will submit, for the consideration of his Honor the Deputy Governor, the accompanying letter, in original, No. 157, dated the 16th ultimo, and its enclosure, from the Commissioner of Dacca; being a report on the experimental cultivation of cotton by Mr. Price, for the month of August last.

I have, &c.
(signed) *Geo. Plowden,*
Officiating Secretary.

(No. 157.)

No. 59.

From *J. Dunbar, Esq.,* Commissioner of Dacca, to the Sudder Board of Revenue,
Fort William.

Gentlemen,

FROM Mr. Price's report for the month of August 1846, which I have the honour to transmit herewith, your Board will learn that the cotton plants upon the Toke farm have suffered very severely from the ravages of a small green caterpillar. The Bourbon has suffered less than the American cotton, and from all I have yet seen, I am disposed to think that the former is more likely to do well in eastern Bengal than any other description of exotic cotton; but even in regard to it I am naturally less sanguine than I was before these destructive insects made their appearance on the farm.

2. The Bengallee cotton is unquestionably that which will best answer our purpose, and to which Mr. Price should chiefly turn his attention, if it can only be shown that a better system of cultivation than that in use by the natives will result in producing a superior article. When I last saw Mr. Price, I pressed upon him strongly the necessity of trying experiments with it in every possible way; and I would fain hope that before long he will be able to show that with careful cultivation we may have indigenous cotton of sufficient length and strength in the staple to suit it for all the purposes of our English manufactures.

Commissioner's Office, Dacca Division,
Sylhet, 16 September 1846.

I have, &c.
(signed) *J. Dunbar,*
Commissioner of Revenue.

* 15th, or Dacca Division; Revenue Proceedings, 21 October 1846, Nos. 58. and 59; Revenue Proceedings, 23 December 1846, Nos. 16 and 17.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 169

(No. 84.)

From *J. O. Price*, Esq., Government Cotton Planter, to *J. Dunbar*, Esq., Commissioner of Dacca Division, Dacca, dated Toke Government Farm, 7 September 1846.

I.
Bengal and
North Western
Provinces.

Sir,

I HAVE the honour to submit to you, for the information of the Honourable the Deputy Governor of Bengal, the monthly report of my proceedings for the month of August.

2. It was with much regret that I informed you in my last report of all the forward cotton on the farm having assumed a much more unhealthy appearance than it previously had, and from the effects of which a great number of its leaves had withered; but this it would have had sufficient time to have recovered from before the dry season would have commenced, soon after which I hoped to have seen it in full bearing; but having been severely attacked in the early part of this month by an innumerable number of small green caterpillars, which have deprived it of more than half its foliage, this hope is therefore now frustrated for a time; and indeed what length of time it may take to recover from the severe check it is now suffering from I am at present not able to state. This second disappointment by insects is particularly unfortunate, as it will naturally destroy any confidence that the favourable appearance of the exotic cotton on the farm might have excited on the minds of the natives, and more particularly as the caterpillars have, in very few instances that I have observed, injured the native kinds of cotton that I am now trying, having confined their ravages almost entirely to the American kind, of which unfortunately, in the present instance, nearly all the forward cotton consists. This partiality they show to it, I think, arises from the better shelter they procure in the large leaf of that kind of cotton, of which, almost on every plant, they appear to select four or five of the largest. These they fold up separately in a sugar-loaf shape, in which they shelter themselves until they have devoured all the more tender leaves. It appears to me, therefore, to be the formation of the leaf of the native cotton that has protected it from their ravages in this season of the year, as it affords little or no shelter for them. I observed lately they have commenced their destruction on the Bourbon plant; but not having much of it, I hope to be able to prevent their injuring it much.

3. I have forwarded a few of the caterpillars to the Agricultural Society, the deputy secretary having kindly offered to endeavour to get a naturalist to examine them, so that, by discovering what genus they are, he may possibly be able to suggest some remedy for their ravages.

I have, &c.
(signed) *J. O. Price*,
Government Cotton Planter.

(True copy.)
(signed) *W. H. Jones*, Assistant.

(No. 348.)

From the Officiating Secretary to the Sudder Board of Revenue to *F. J. Halliday*, Esq., Secretary to the Government of Bengal, Revenue Department, dated Fort William, 9 November 1846.

Rev. Pro.
18 Nov. 1846.
No. 5.

Sir,

I AM directed by the Sudder Board of Revenue to request that you will submit, for the consideration of his Honour the Deputy Governor, the accompanying letter, in original, No. 163, dated the 23d ultimo, and its enclosure, from the Commissioner of Dacca; being a report on Mr. Price's experimental cultivation of cotton for the month of September last.

Mis. Dept.
Present:
J. Lewis and
E. M. Gordon,
Esqrs.

2. The samples referred to in the second paragraph of the Commissioner's letter will be forwarded immediately on their receipt.

I have, &c.
(signed) *Geo. Plowden*,
Officiating Secretary.

(No. 163.)

From *J. Dunbar*, Esq., Commissioner of Dacca, to the Sudder Board of Revenue, Fort William.

Rev. Pro.
18 Nov. 1846.
No. 6.

Sir,

WHEN I last addressed your Board on the subject of Mr. Price's proceedings, the prospects of the Toke cotton farm were somewhat gloomy. That gentleman's report for the month of September, which I have now the honour to transmit, shows that a very favourable change has taken place, and that there is every reason to look for a plentiful return in due season.

296—Sess. 2.

Y

2. I take

170 PAPERS RELATING TO MEASURES TAKEN SINCE 1847

I.
Bengal and
North Western
Provinces.

2. I take this opportunity of informing your Board that Mr. Price has just brought down with him ten packages of cotton, cleaned partly by the native churka, and partly by the American gin, with a view to its being sent to England for examination and report. It will be kept here till the arrival of the next steamer, by which (in my absence) it will be transmitted to your Board by my assistant, Mr. Jones.

3. I annex a memorandum of the contents of the several packages.

Commissioner's Office, Dacca Division,
Dacca, 23 October 1846.

I have, &c.
(signed) *J. Dunbar*,
Commissioner of Revenue.

MEMORANDUM.

- | | | | |
|----------|-----|---|--|
| 1.—45ths | - R | - | Grown at Rungpore from Mexican seed. |
| 2.—39 | - R | - | Ditto - - ditto - - ditto. |
| 3.—63 | - F | - | Ditto Dacca Government farm, from American seed. |
| 4.—45 | - F | - | Ditto - - - - ditto - - - - ditto. |
| 5.—48 | - F | - | Ditto - - - - ditto - - - - ditto. |
| 6.—43 | - A | - | Ditto Assam, from native seed. |
| 7.—46 | - T | - | Ditto Tipperah - ditto. |
| 8.—16 | - T | - | Ditto - - - - ditto. |
| 9.—17 | - D | - | Ditto Dacca, from fine native seed. |
| 10.—16 | - B | - | Ditto Foolbarria, from Bourbon seed. |

(No. 91.)

From *J. O. Price*, Esq., Government Cotton Planter, Dacca, to *J. Dunbar*, Esq.,
Commissioner of Dacca.

Sir,

I HAVE the honour to submit to you, for the information of the Honourable the Deputy Governor of Bengal, the monthly report of my proceedings for the month of September.

2. It affords me much pleasure to be able to inform you that the cotton plant on the farm that suffered so much lately from caterpillars has now all, with the exception of about two beegahs, entirely recovered its leaf, and is now looking very healthy again; it is now in full flower, and I am in hopes, notwithstanding all the difficulties it has had to contend with, that it will yield largely during the dry season; indeed, the check it received from the insects has been of service to it, in as far as keeping it from bearing in the rains, which injures the wool not only in colour, but very considerably in strength of staple.

3. The Bourbon seed that I planted in June on the red Kunker soil, mixed with a slight deposit of alluvial soil, is most promising, being now about five feet high, and partly in flower; indeed, I never saw plants of the same age look finer than it does. I hope we will be able to give this kind of soil a trial on a larger scale next season, and particularly so as one-half the labour is sufficient for it that the alluvial level lands require.

4. I have planted a few beegahs from the seed of the fine Dacca cotton, and I am at present preparing land for the Patna seed, of which I hope to be able to plant from 10 to 15 beegahs on the farm, besides the ryottee cultivation with that seed, the exact quantity of which I will not be able to inform you until the end of next month, on account of the seed arriving so late in the season.

Dacca, 21 October 1846

I have, &c.
(signed) *J. O. Price*,
Government Cotton Planter.

(True copy.)

(signed) *W. H. Jones*, Assistant.

Rev. Pro.
18 Nov. 1846.
No. 7.

(No. 360.)

From the Officiating Secretary to the Sudder Board of Revenue to *F. J. Halliday*, Esq.,
Secretary to the Government of Bengal, Revenue Department, dated Fort William,
13 November 1846.

Sir,

In continuation of my letter, No. 348, dated the 9th instant, para. 2, I am directed by the Sudder Board of Revenue to transmit herewith ten packages of cotton from Mr. *J. O. Price*, of Dacca. The accompanying musters of the same cotton, put up separately, will probably obviate the necessity of opening the larger packages.

Mis. Dept.
Present:
J. Lewis and
E. M. Gordon,
Esqrs.

I have, &c.
(signed) *Geo. Plowden*,
Officiating Secretary.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 171

(No. 856.)

From *C. Beadon*, Esq., Under Secretary to the Government of Bengal, to the Honorary Secretary to the Agricultural and Horticultural Society.

Sir,

I AM directed to forward, for the Society's use, a copy of Mr. Price's reports from October 1845 to September last.

2. The Deputy Governor will be happy to receive the opinion of the society on the accompanying six samples of cotton received with Mr. Price's last communication.

Fort William,
18 November 1846.

I have, &c.
(signed) *C. Beadon*,
Under Secretary to the Government of Bengal.

(True copies.)
(signed) *C. Beadon*,
Under Secretary to the Government of Bengal.

From *James Hume*, Esq., Honorary Secretary to the Agricultural and Horticultural Society, to *C. Beadon*, Esq., Under Secretary to the Government of Bengal.

Sir,

I AM directed by the Agricultural Society to request that you will convey to his Honour the Deputy Governor the best thanks of the society for the copies of Mr. Price's cotton reports, which accompanied your letter to my address of the 18th ultimo, and which was submitted at a general meeting held on the 9th instant.

2. I have further the pleasure to annex a report on the several musters of cotton enclosed in your letter under acknowledgment; and have the honour to be, &c.,

Metcalf Hall, Calcutta,
11 December 1846.

(signed) *James Hume*,
Honorary Secretary.

P.S. The musters are returned for reference.

REPORT by Mr. *Owen Potter*, a Member of the Cotton Committee of the Agricultural Society, on Six Musters of Cotton enclosed in Mr. Under-Secretary *Beadon's* letter of 18 November 1846,

6. Assam : very short in staple, and tender ; free from seeds, and clean.
5. Tipperah : good colour and clean, but short staple ; woolly, dry, and tender.
4. Dacca : short staple, slightly stained, free from seed.
3. Government Farm, American seed : short-stapled for this class, and seems to have been frayed a good deal in the process of cleaning ; dull in colour, free from seed.
2. Rungpore, Mexican Seed : stained, leafy, nibby ; short-stapled for its class.
1. Phoolbariah, Bourbon : the best-stapled sample of the lot, and with some native in it, stained.

Samples 4 to 6 and 2 appear to me as if they had been allowed to remain on the plant in the heat of the sun long after the pod had fully opened, by which the cotton is dried up and injured ; and this is a frequent fault with East India cottons.

Some of these samples are equal to well churka-cleaned Baroach, or Jumboseer cottons.

(True copies.)
(signed) *C. Beadon*,
Under Secretary to the Government of Bengal.

(No. 986.)

From *C. Beadon*, Esq., Under Secretary to the Government of Bengal, to the Board of Customs, Salt and Opium.

Gentlemen,

I AM directed by the Honourable the Deputy Governor to forward the accompanying ten packages of Dacca cotton, and to request that your Board will, after having them screwed into bales, make over the same to the Superintendent of Marine, who has received the necessary instructions for its shipment to Europe.

Fort William,
30 December 1846.

I have, &c.
(signed) *C. Beadon*,
Under Secretary to the Government of Bengal.

I.
Bengal and
North Western
Provinces.

Rev. Pro.
18 Nov. 1846.
No. 8.
Revenue.

Rev. Pro.
30 Dec. 1846.
No. 61.

Rev. Pro.
30 Dec. 1846.
No. 62.
Revenue.

Bengal and
North Western
Provinces.

Rev. Pro.
30 Dec. 1846.
No. 62.
Revenue.

(No. 987.)

From *C. Beadon*, Esq., Under Secretary to the Government of Bengal, to the Acting Superintendent of Marine.

Sir,

I AM directed to request that you will obtain freight for ten bales of Dacca cotton that will be made over to you by the Board of Customs, Salt and Opium, dispatching the same under consignment to the Honourable the Court of Directors, with a bill of lading, duplicates of which you will forward to this department in reporting the dispatch.

I have, &c.

(signed) *C. Beadon*,

Under Secretary to the Government of Bengal.

Fort William,
30, December 1846.

(No. 269.)

From the Officiating Superintendent of Marine to the Honourable Sir *T. H. Maddock*, Knt., Deputy Governor of Bengal.

Honourable Sir,

WITH reference to Mr. Under-Secretary Beadon's letter, No. 987, dated the 30th ultimo, I have the honour to report that I have engaged tonnage to England on the ship "Ellenborough" for the cotton therein mentioned, which have been packed up in two bales, at 5*l.* 15*s.* per ton, of 50 cubic feet, payable in England on due delivery, in good order and well-conditioned; and I beg to forward herewith, for transmission to the Honourable the Court of Directors, bills of lading, in duplicate, for the same.

I have, &c.

(signed) *T. E. Rogers*,

Officiating Superintendent.

Fort William,
Marine Superintendent's Office,
19 January 1847.

(True copies.)

(signed) *C. Beadon*,

Under Secretary to the Government of Bengal.

EXTRACT from the Proceedings of the Government of Bengal, in the Revenue Department, dated 23 December 1846.

No. 16.

(No. 403.)

From the Secretary to the Sudder Board of Revenue to *F. J. Halliday*, Esq., Secretary to the Government of Bengal, Revenue Department, dated Fort William, 17 December 1846.

Sir,

I AM directed by the Sudder Board of Revenue to request that you will submit, for the consideration of his Honour the Deputy Governor, the accompanying letter, in original, No. 185, dated the 5th instant, and its enclosure, from the Commissioner of Dacca; being a report on Mr. Price's experimental cultivation of cotton, for the month of October last.

I have, &c.

(signed) *E. Currie*,

Secretary.

Mis. Dept.
Present:
J. Lewis and
E. M. Gordon,
Esqrs.

No. 17:

(No. 185.)

From *J. Dunbar*, Esq., Commissioner of Dacca, to the Sudder Board of Revenue, Fort William.

Gentlemen,

I HAVE the honour to forward herewith Mr. Price's report of proceedings for the month of October last.

I have, &c.

(signed) *J. Dunbar*,

Commissioner of Revenue.

Commissioner's Office, Dacca Division,
Dacca, 5 December 1846.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 173

(No. 100.)

From *J. O. Price*, Esq., Government Cotton Planter, to *J. Dunbar*, Esq., Commissioner of
Dacca Division, dated Toke Government Farm, 1 November 1846.

I.
Bengal and
North Western
Provinces:

Sir,

I HAVE the honour to submit to you, for the information of the Honourable the Deputy
Governor of Bengal, the monthly report of my proceedings for the month of October.

The lands that I had intended having prepared early in the month for the Patna native
seed I have not been able to put the ploughs into until the latter end of the month, on
account of the continued heavy rains that we have had from the 1st until the 20th instant.
This is rather unfortunate, as the earlier the seed is planted in this month the better, so as
to enable the cotton to have a fair start before the moisture leaves the soil, as also that of
leaving sufficient time to pick all the cotton off the plants before the rains commence. The
coolies have been engaged, as usual, cleaning the cotton field, and giving mould where
required.

I have, &c.
(signed) *J. O. Price*,
Government Cotton Planter.

(True copy.)

(signed) *W. H. Jones*, Assistant.

EXTRACT Revenue Letter from Bengal, dated 31 May (No. 11) 1847.

26. HEREWITH are forwarded Mr. Price's reports* on the experimental culti- 15th or Dacca
vation of cotton at Dacca, for the months of November and December 1846, and Division.
January 1847.

(No. 5, T.)

EXTRACT from the Proceedings of the Government of Bengal, in the Revenue
Department, dated 6 January 1847.

(No. 1.)

From the Secretary to the Sudder Board of Revenue to *F. J. Halliday*, Esq.,
Secretary to the Government of Bengal, Revenue Department, dated Fort
William, 2 January 1847.

No. 4.

Sir,

I AM directed by the Sudder Board of Revenue to request that you will submit,
for the information of the Honourable the Deputy Governor, the accompanying
letter, dated the 1st ultimo, from Mr. *J. O. Price*, being that gentleman's report
on the experimental cultivation of cotton for the month of November last.

Mis. Dept.
Present:
J. Lewis and
E. M. Gordon,
Esqrs.

I have, &c.
(signed) *E. Currie*,
Secretary.

(No. 106.) *

From *J. O. Price*, Esq., Government Cotton Planter, to *J. Dunbar*, Esq., Commissioner
of Revenue of the Dacca Division.

** No. 5.

Sir,

I HAVE the honour to submit to you, for the information of the Honourable the Deputy
Governor of Bengal, the monthly report of my proceedings for the month of November.

2. The proceedings on the farm this month have almost entirely been confined to that of
preparing land and in planting some with the Patna native cotton seed, which the wetness
of the previous month, as also that of the late arrival of the seed, would not admit of having
done sooner.

3. The

* Revenue Proceedings, 6 January 1847, Nos. 4 and 5; Revenue Proceedings, 10 February
1847, Nos. 28 and 29; Revenue Proceedings, 10 March 1847, Nos. 18 and 19.

I.
Bengal and
North Western
Provinces.

3. The American cotton, and also some native that I planted during the rains, are now yielding cotton lightly, and in picking of which the coolies are occasionally engaged

4. Since the rains have ceased I have tried the crossing system of improving cotton (but to a limited extent), and I am afraid, up to the present date, with little success, not having been fully acquainted with the system by which it is accomplished. This information I hoped to have obtained from Dr. Burn's (Superintendent of Government cotton cultivation at Broach) correspondence with the Agricultural Society, but on examination I found that it did not give any particulars respecting it; I therefore applied to the assistant secretary of the Agricultural Society for any information that he might be in possession of respecting it, who has kindly favoured me with a number of the Agricultural Society's Journal of October 1842, in which I find Dr. Thompson's mode systematically described; I therefore hope, in a few months, to be able to report more favourably of our experiments in crossing the different kinds of cotton now under cultivation on the farm.

Toke Government Farm,
1 December 1846.

I have &c.
(signed) *J. O. Price,*
Government Cotton Planter.

Commissioner's Office, Dacca Division, Dacca,
17 December 1846.

(True copy.)
(signed) *W. H. Jones,* Assistant.

EXTRACT from the Proceedings of the Government of Bengal, in the Revenue Department, dated 10 February 1847.

No. 28.

(No. 45.)

From the Secretary to the Sudder Board to *F. J. Halliday*, Esq., Secretary to the Government of Bengal, Revenue Department, dated Fort William, 4 February 1847.

Sir,

I AM directed by the Sudder Board of Revenue to request that you will submit, for the information of his Honour the Deputy Governor, the accompanying letter, No. 7, dated the 19th ultimo, from the Commissioner of Dacca, together with its enclosure, being Mr. J. O. Price's report on the experimental cultivation of cotton for the month of December last.

I have, &c.
(signed) *E. Currie,*
Secretary.

Sudder Board of Revenue.

No. 28.

(No. 7 of 1847.)

From *J. Dunbar*, Esq., Commissioner of Dacca, to the Sudder Board of Revenue, Fort William.

Gentlemen,

I HAVE the honour to forward herewith Mr. Price's report for the month of December 1847.

2d. I think it is well that the difficulties which Mr. Price has experienced in the cultivation of the exotic cotton have had the effect of teaching him to turn his attention more to the growth of the indigenous plant. I cannot yet agree with him, however, in thinking that we should in any degree relax from our efforts to prove that foreign cottons can be successfully grown in this district. We must persevere, in spite of every obstacle, for a time; the result of one or two seasons, however unfavourable, should not be allowed to make us despair of ultimate success, so long as even one of the various modes of cultivating cotton remains untried; much, nay all, may depend upon the particular time and manner in which the seed is committed to the ground, and the best season and best method of planting may only be ascertained after many failures. I have written to Mr. Price to this effect.

I have, &c.
(signed) *J. Dunbar,*
Commissioner of Revenue

Commissioner's Office, Dacca Division, Dacca,
19 January 1847.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 175

(No. 5.)

From *J. O. Price*, Government Cotton Planter, to *J. Dunbar*, Esq., Commissioner of Dacca Division.

I.
Bengal and
North Western
Provinces.

Sir,

I HAVE the honour to submit to you, for the information of the Honourable the Deputy Governor of Bengal, the monthly report of my proceedings for the month of December.

2. The American cotton, and also about two biggahs of the native kind, which I mentioned in my last report, having commenced yielding cotton, continued to do so up to the 15th instant, by which time the coldness of the nights had had such an effect on it as almost to entirely prevent the bolls from opening, the leaves also became dry and withered, and dropping from the plants, so much so that the ground underneath them is now quite covered with them, and the field generally has all the appearance of a cotton field in America in the latter end of November, when it has finished bearing, and the frost has deprived it of its foliage, with the exception of that of the cotton here having releafed itself in some measure again, but with a much smaller leaf than it had before, and is now perfectly at a stand, and I suppose will remain so until the warm weather commences. The unforeseen obstacles that appear to continue to increase upon us in the growth of foreign cotton convinces me of the great difficulty that will at all times attend growing it in this district to any increased extent, and proves to me the necessity and also the utility of our confining the present experiment more to the growth of the aboriginal cotton of this country, of which I observe there are several varieties that have not been tried as yet in this part of India, and one or two of those reported to be of a much longer staple than any we have in this district.

3. Respecting the distribution of the seed I have received from Patna, I have made advances for about 30 biggahs of Ryottee cultivation, and supplied the parties with that seed, but on visiting lately the several places that I had done so, I regret to add that I found only about one-half that quantity planted, and the other half of the land in preparation to receive the seed, but as it would be useless putting in seed so late in the season, I have ordered them to let it remain over until we get rain in March or April. The parties that received the advances say that the great quantity of sickness that has been in the country lately had prevented them from being able to obtain ploughs, and therefore caused the delay in getting the lands prepared sooner. I have also got about eight biggahs of land on the farm planted with that seed, which has all vegetated, but the Bengalee cotton in general, this year, I found to be very backward in every place I have been this month.

The heavy rains in October, and the intense coldness of the nights in the early part of this month, appears to have caused this lateness in the crop

4. The hands employed on the farm have been principally engaged this month in getting thatching grass and reeds to repair their huts, and also in cleaning out ditches.

I have, &c.
(signed) *J. O. Price*,
Government Cotton Planter.

Toke Government Farm,
1 January 1847.

(True copy.)
(signed) W. H. Jones, Assistant.

No Orders.

EXTRACT from the Proceedings of the Government of Bengal in the Revenue Department, dated 10 March 1847.

(No. 73.)

No. 18.

From the Secretary to the Sudder Board of Revenue to *F. J. Halliday*, Esq., Secretary to the Government of Bengal, Revenue Department, dated Fort William, 6 March 1847.

Sir,

I AM directed by the Sudder Board of Revenue to request that you will submit, for the information of his Honour the Deputy Governor, the accompanying letter from *J. O. Price*, No. 19, dated 1st February last, being his report for the month of January preceding, on the experimental cultivation of cotton.

Mis. Dept.
Present :
J. Lewis and
E. M. Gordon,
Esqrs.

I have, &c.
(signed) *E. Currie*, Secretary.

I.
Bengal and
North Western
Provinces.
No. 19.

176. PAPERS RELATING TO MEASURES TAKEN SINCE 1847

(No. 19.)

From *J. O. Price*, Esq., Government Cotton Planter, to *J. Dunbar*, Esq., Commissioner of Dacca, dated 1 February 1847.

Sir,

I HAVE the honour to submit to you, for the information of the Honourable the Deputy Governor of Bengal, the monthly report of my proceedings for the month of January.

2. The weather having continued cold all this month, there has consequently no change taken place in the appearance of either the Neej or Ryottee cultivation worth mentioning.

3. I beg leave to inform you, that a number of ryots in Mymensing district have offered to take advances to cultivate the indigenous cotton on a limited scale in the month of April and May by any improved mode of cultivation that may be required of them; also that they will give security for the amount of advances they may receive; this will, therefore, not only be a safe but sure system of introducing among the natives an improved cultivation of cotton, by which, I am confident, a great improvement could be made on the qualities of the native kind of kuppas.

I have, &c.
(signed) *J. O. Price*,
Government Cotton Planter.

Dacca Government Farm,
1 February 1847.

Commissioner's Office, Dacca Division, Dacca,
19 February 1847.

(True copy.)
(signed) *W. H. Jones*, Assistant.

EXTRACT Revenue Letter from Bengal, dated 10 September (No. 17) 1847.

Reports on the
experimental cul-
tivation of cotton
at Dacca.

38. HEREWITH are forwarded Mr. Price's reports* on the experimental cultivation of cotton at Dacca, for the months of February and March.

39. I have requested the accountant, Government of Bengal, to furnish a statement of expenses incurred on account of such cultivation at Dacca, during the year ending 30th April.

Revenue Proceed-
ings, 12th May
1847, Nos. 5 to 9.

40. I have requested the Government of Madras to procure from the superintendent of cotton cultivations at Coimbatore, for the use of the Government experimental plantations at Dacca, a small quantity of acclimated cotton seed of the various descriptions noted in the margin.†

EXTRACT from the Proceedings of the Government of Bengal in the Revenue Department, under date the 28th April 1847.

No. 30.

(No. 107.)

From *E. Currie*, Esq., Secretary to the Sudder Board of Revenue, to *F. J. Halliday*, Esq., Secretary to the Government of Bengal, Revenue Department, dated Fort William, 1 April 1847.

Sir,

I AM directed by the Sudder Board of Revenue to request that you will submit, for the information of his Honour the Deputy Governor, the accompanying letter, No. 30, dated the 1st ultimo, from Mr. J. O. Price, being that gentleman's report on the experimental cultivation of cotton for the month of February.

Mis. Dept.
Present:
J. Lewis and
E. M. Gordon,
Esqrs.

I have, &c.
(signed) *E. Currie*, Secretary.

* Revenue Proceedings, 28th April 1847, Nos. 30 to 32. Revenue Proceedings, 5th May 1847, Nos. 41 and 42.

† Sea Island, South American, Mexican, Bourbon.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 177

(No. 30 of 1847.)

From *J. O. Price*, Esq., Government Cotton Planter, Dacca, to *J. Dunbar*, Esq.,
Commissioner of the Dacca Division.

I.
Bengal and
North West
Provinces.

No. 31.

Sir,

I HAVE the honour to submit to you, for the information of the Honourable the Deputy-governor of Bengal, the monthly report of my proceedings for the month of February.

2d. In the early part of this month I visited the several places on the Dhullessaree; that I have tried ryottee cultivation with the Patna seed, and, as I had anticipated from late planting, I found that on the poorer kind of land suffering much from the cold and want of moisture in the land; but on visiting one of the places named Oomanundapore, I found the very contrary the case. On about a beegah of land that had been planted there immediately on receipt of the seed, the land having been previously cultivated and manured for the purpose, the plants were about 18 inches high, and extremely healthy in appearance; this, with several other instances that have come under my notice, of which the small patch of Bourbon cotton at Foolharriah is one, that land having been once used as part of a garden, leads me to hope that manure (of which there is none better that I have tried than rotten indigo satee), will I hope enable us to contend against the difficulties that we have experienced, occasioned in a great measure by the extremes of this climate and the exhausted state of much of the soil.

3d. With respect to the neej cultivation, I have not anything to state in addition to what I have previously reported worth mentioning, not having yet had any rain to occasion any change in the appearance of the plants.

Toke Government Farm,
1 March 1847.

I have, &c.
(signed) *J. O. Price*,
Government Cotton Planter.

Commissioner's Office, Dacca Division, Dacca,
19 March 1847.

(True copy.)
(signed) *W. H. Jones*, Assistant.

(No. 308.)

From *C. Beadon*, Esq., Under Secretary to the Government of Bengal, to the
Accountant, Government of Bengal.

No. 32.

Sir,

I AM directed by the Deputy Governor to request that you will furnish a statement of Revenue expenses incurred on account of the experimental cotton cultivation, under Mr. Price, at Dacca, during the year ending on the 30th instant.

Fort William,
28 April 1847.

I have, &c.
(signed) *C. Beadon*,
Under Sec. to the Govt. of Bengal.

EXTRACT from the Proceedings of the Government of Bengal in the Revenue Department, under date the 5th May 1847.

(No. 134.)

From *E. Currie*, Esq., Secretary to the Sudder Board of Revenue, to
F. J. Halliday, Esq., Secretary to the Government of Bengal, Revenue Department.

No. 41.

Sir,

Fort William, 26 April 1847.

I AM directed by the Sudder Board of Revenue to request that you will submit, for the information of his Honour the Deputy Governor, the accompanying letter, No. 38, dated the 1st instant, from Mr. J. O. Price, being that gentleman's report on the experimental cultivation of cotton for the month of March last.

Miss. Dept.
Present:
J. Lewis, Esq.
T. R. Davidson
Esq.

I have, &c.
(signed) *E. Currie*, Secretary.

I.
Bengal and
North Western
Provinces.

(No. 38.)

From *J. O. Price*, Esq., Government Cotton Planter, Dacca, to *J. Dunbar*, Esq.,
Commissioner of the Dacca Division.

No. 42.

Sir,

I HAVE the honour to submit to you, for the information of the Honourable the Deput Governor of Bengal, the monthly report of my proceedings for the month of March.

2d. The weather having continued dry all this month, with exception of the 27th instant on the evening of which there was a severe gale and some rain, but not enough to enable us to commence planting, I have consequently kept the coolies employed cleaning the jungle on a piece of high rent land belonging to the farm, for the purpose of giving the kind of soil a fair trial, by planting it with good seed of the several kinds we have got as soon as the rains commence. This sort of land I am in hopes will prove better suited for planting in the rainy season than that of the alluvial kind, being easily kept clean when cultivated, which it is very difficult to do with the latter kind in the wet season.

3d. It was my intention to have visited Tipperah district this month; but, on second consideration, I thought it would be more advisable to defer going there until the rains commenced, and then take some exotic seed with me, and see it properly planted myself; some seed that I sent there last year, I was informed, never vegetated, although it was perfectly fresh.

4th. I visited the several places this month again at which we have ryottee cultivation and found the two places of which I reported favourably of last month still looking healthy and not suffering in any way from the drought: and on my return to the farm, I supplied the Rajah of Tipperah, through J. P. Wise, esq., with about one and a half maunds of fine native cotton seed, and also with a bag of acclimated American, both of which I am informed he intends having planted near his residence in Tipperah, as the cotton that generally grown in that district is of a very indifferent description.

5th. In recommending indigo síttee in my last report as an excellent manure for cotton lands, I omitted mentioning an experiment I tried last year with four different kinds of manure when planting cotton seed, and, after giving all the same cultivation, the result was that the síttee was fully as good a manure, if not better, than any of the others for cotton cultivation. The great quantity of it that is available in this district I hope will plead my excuse for having again trespassed on your time with this subject.

Government Farm,
1 April 1847.

I have, &c.
(signed) *J. O. Price*,
Government Cotton Planter.

Commissioner's Office, Dacca Division, Dacca,
10 April 1847.

(True copy.)
(signed) *W. H. Jones*, Assistant.

EXTRACT from the Proceedings of the Government of Bengal in the Revenue Department, under date the 12th May 1847.

(No. 128.)

No. 5. From *E. Currie*, Esq., Secretary to the Sudder Board of Revenue, to *F. Halliday*, Esq., Secretary to the Government of Bengal, Revenue Department, dated Fort William, 22d April 1847.

Sir,

Miss. Dept.
Present:
J. Lewis, Esq. and
T. R. Davidson,
Esq.

I AM directed by the Sudder Board of Revenue to request that you will submit for the orders of the Honourable the Deputy Governor the accompanying letter, No. 52, dated the 7th instant, from the Commissioner of Dacca, and its enclosure, with the Board's recommendation that Mr. Price's application to be provided with a further supply of cotton seeds be complied with.

Sudder Board of Revenue.

I have, &c.
(signed) *E. Currie*, Secretary.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 179

I.
Bengal and
North Western
Provinces.
No. 6.

(No. 52.)

From *J. Dunbar, Esq., Commissioner of Dacca Division, to the Sudder Board of Revenue, Fort William.*

Gentlemen,

I HAVE the honour to forward herewith a copy of a letter from Mr. Price, No. 27, dated 2d instant, soliciting a further supply of cotton seed of various kinds.

2d. Mr. Price was in Dacca a few days since, and I had a good deal of conversation with him upon the subject of our present experiments, the result of which, so far as they have gone, is a conviction on his part, that of the several kinds of foreign cotton yet tried the Bourbon is the most likely to do well in this part of the country; I hope, therefore, that measures will be immediately taken for procuring a further supply of Bourbon seed, so as to enable Mr. Price to put it in the ground in September next.

3d. I hope it will also be in the power of the Government to procure some Sea Island, South American and Mexican cotton seeds. I am more anxious about the Bourbon, however, as the extraordinary fertility of a small patch which I have seen bearing produce for more than two years at Foolbariah, leads me to think this kind of cotton is very likely to thrive all over the district.

Commissioner's Office, Dacca Division,
Dacca, 7 April 1847.

I have, &c.
(signed) *J. Dunbar,*
Commissioner of Revenue.

(No. 37.)

From *J. O. Price, Esq., Government Cotton Planter, Dacca, to J. Dunbar, Esq., Commissioner of the Dacca Division.*

Sir,

I BEG leave to solicit your assistance in applying to Government for a supply of such exotic cotton seeds, such as we have not yet had an opportunity of trying, viz., Sea Islands, South American and Mexican, also Bourbon, of which we once got from Coimbatore, but very little of it vegetated; however, from what I have seen of the little that did, I am inclined to be of opinion that it will suit this country better than the American kind, and that for several reasons; in the first place, it stands the dry weather much better than the other, and in addition to which the cotton is easily divested of its seed by the use of the common churka, which I am in hopes will be a great inducement to the natives to cultivate it. If we could procure, by September, four maunds of that seed, and one or two maunds of each of the other kinds, it would be in sufficient time for planting; indeed if cotton seed is not planted at a proper time in this country, very little can be expected from it; of this we have had sufficient experience, on account of the seed supplied the farm having, with exception of once, all arrived out of season.

Government Farm,
2 April 1847.

I have, &c.
(signed) *J. O. Price,*
Govt. Cotton Planter.

Commissioner's Office, Dacca Division,
Dacca, 7 April 1847.

(True copy.)
(signed) *W. H. Jones, Assistant.*

(No. 325.)

From *C. Beadon, Esq., Under Secretary to the Government of Bengal, to the Honorary Secretary, Agricultural and Horticultural Society.*

No. 7.

Sir,

I AM directed by the Honourable the Deputy Governor to request that the Society will be good enough to procure for the use of the Government experimental plantation at Dacca, a small supply of cotton seed of the various descriptions noted in the margin.*

Fort William,
28 April 1847.

I have, &c.
(signed) *C. Beadon,*
Under Secretary to the Govt. of Bengal.

* Sea Island, South American, Mexican, Bourbon.

I.
Bengal and
North Western
Provinces.

(No. 326.)

From *C. Beadon*, Esq., Under Secretary to the Government of Bengal, to *E. Currie*, Esq.,
Secretary to the Sudder Board of Revenue.

Revenue.

Sir,
IN reply to your letter, No. 128 of the 22d instant, with enclosures, I am directed to inform you that instructions have been issued in the proper quarter for the procurement of the seeds required by Mr. Price.

2d. The original enclosures are returned, copies having been kept for record.

Fort William,
28 April 1847.

I have, &c.
(signed) *C. Beadon*,
Under Sec. to the Govt. of Bengal.

From *James Hume*, Esq., Honorary Secretary to the Agricultural and Horticultural Society, to *C. Beadon*, Esq., Under Secretary to the Government of Bengal.

No. 8.

Sir,
I AM directed by the Agricultural Society to express its regret at not being able to meet the request conveyed in your application of the 28th ultimo. The society has not, unfortunately, any fresh foreign cotton seed in store, neither is it able to obtain any in the market. Small supplies of acclimated seed, it is suggested, might be obtained from the Government cotton farms at Coimbatore.

Calcutta,
6 May 1847.

I have, &c.
(signed) *James Hume*,
Hon. Sec., Agricultural and Horticultural Society.

(No. 106.)

No. 9.

From *C. Beadon*, Esq., Under Secretary to the Government of Bengal, to the Secretary to the Government of Fort St. George.

Revenue.

Sir,
I AM directed by the Honourable the Deputy Governor of Bengal to request that, with the permission of the Most Noble the Governor in Council, instructions may be issued to the superintendent of cotton plantation at Coimbatore to send a small quantity of acclimated cotton seed, of the various descriptions noted in the margin,* to the address of the Superintendent of Marine, for the use of the Government experimental plantation in Dacca.

Fort William,
7 May 1847.

I have, &c.
(signed) *C. Beadon*,
Under Sec. to the Govt. of Bengal.

(No. 356.)

COPY forwarded to the Superintendent of Marine, with a request that he will forward the seed immediately on its arrival to Mr. J. O. Price, cotton planter at Dacca.

EXTRACT from a General Letter from the Government of Bengal to the Honourable the Court of Directors in the Revenue Department, dated the 13th January 1848 (No. 3.)

Reports on the
cotton cultivation
at Dacca.

32. Herewith are forwarded Mr. Price's reports † on the experimental cultivation of cotton at Dacca, for the months of April, May, June, and July last.

* Sea Island, South American, Mexican, Bourbon.

† Revenue Proceedings, 2d June 1847, Nos. 10 and 11. Revenue Proceedings, 7th July 1847, Nos. 14 and 15. Revenue Proceedings, 18th August 1847, Nos. 17 and 18. Revenue Proceedings, 25th August 1847, Nos. 7 and 8.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 1847

EXTRACT from the Proceedings of the Government of Bengal, in the Revenue Department, under date the 2d June 1847.

I.
Bengal and
North Western
Provinces.

(No. 172.)

From the Officiating Secretary to the Sudder Board of Revenue to *F. J. Halliday, Esq.*, Secretary to the Government of Bengal, Revenue Department, dated Fort William, the 25th May 1847.

No. 10.

Sir,

I AM directed by the Sudder Board of Revenue to request that you will submit for the consideration of his Honour the Deputy Governor, the accompanying letter (No. 49), dated the 1st instant, from Mr. J. O. Price, being his report for the month of April last, on the experimental cultivation of cotton.

Miss. Dept.
Present:
J. Lewis, Esq. and
E. M. Gordon, Esq.

I have, &c.
(signed) *G. Plowden,*
Officiating Secretary.

(No. 49.)

From *J. O. Price, Esq.*, Government Cotton Planter, to *J. Dunbar, Esq.*, Commissioner of Dacca.

No. 11.

Sir,

I HAVE the honour to submit to you, for the information of the Honourable the Deputy Governor of Bengal, the monthly report of my proceeding for the month of April.

2. The weather having continued very dry until the 16th instant, the coolies therefore continued employed up to that time in preparing land for seed, and in hoeing among the old cotton, but having had a heavy fall of rain on the above-named date, the hands have since that time been employed in planting the prepared land, and cleaning and supplying the young cotton, also in pruning the old cotton.

3. The natives to whom I lately gave advances for ryottee cultivation have their lands all well prepared for seed, and will plant them early in the ensuing month, which is their favourite time for planting in high lands.

4. I have just returned from examining the cultivation at the several places that I made advances in the end of October last; the persons that received advances at that time are now engaged either in cleaning and supplying the lands they then planted, or in planting newly prepared land, not having been able to get it prepared in time for planting when they received advances; in addition to which, the Patna seed having arrived so late in the season, was a great drawback, but as this seed is still perfectly good, I am in hopes it will yet turn out well, as, at the two places I before mentioned (where the land had been prepared for it when it arrived) there is now the finest looking Bengallee cotton I have yet seen; in fact, it branches out more like exotic cotton than that of the native kinds.

Dacca Govt. Farm, 1st May 1847.

I have, &c.
(signed) *J. O. Price,*
Govt. Cotton Planter.

Commissioner's Office, Dacca Division,
Dacca, the 13th May 1847.

(True copy.)
(signed) *W. H. Jones,*
Assistant.

EXTRACT from the Proceedings of the Government of Bengal, in the Revenue Department, under date the 7th July 1847.

(No. 218.)

From the Secretary to the Sudder Board of Revenue to *F. J. Halliday, Esq.*, Secretary to the Government of Bengal, Revenue Department, dated Fort William, the 1st July 1847.

No. 14.

Sir,

I AM directed by the Sudder Board of Revenue to request that you will submit, for the consideration of his Honour the Deputy Governor, the accompanying letter (No. 60), dated the 1st ultimo, from Mr. J. O. Price, to the address of the Commissioner of Dacca, being that gentleman's report on the experimental cultivation of cotton for the month of May last.

Miss. Dept.
Present:
J. Lewis, Esq. and
E. M. Gordon, Esq.

I have, &c.
(signed) *G. Plowden,*
Secretary.

I.
Bengal and
North Western
Provinces.

No. 15.

(No. 60 of 1847.)

From *J. O. Price, Esq.*, Government Cotton Planter, Dacca, to *J. Dunbar, Esq.*,
Commissioner of 15th Division, Dacca.

Sir,

I HAVE the honour to submit to you, for the information of the Honourable the Deputy Governor of Bengal, the monthly report of my proceedings for the month of May.

2d. I have been engaged the greater part of the month in again visiting the several places in which we have ryottee cotton cultivation, and I have much pleasure in stating that that which was planted in the latter end of last year continues to improve very rapidly, also that which has been lately planted has vegetated well. We have now about 61 beegahs of ryottee cultivation, nearly all of which is planted with the Patna Boga seed.

3d. There is also on the farm 18 beegahs planted with Patna seed, principally with the Boga kind, the Nurmah kind not having kept so well; also 11 beegahs planted with Dacca seed, so that we have about 90 beegahs of indigenous cotton this year, which I hope may turn out well, as it appears to be much better suited for the exhausted lands of this country than the exotic kinds are, unless where the land has been manured and otherwise well prepared for the seed of the latter kinds, which would prove too expensive for the generality of ryots in this district; but to those who have the means of doing so, it would no doubt (like the land in every other country) abundantly repay them for the trouble and expense of doing so. The pruned cotton is now fast forming new branches and leaves. I am in hopes we will derive two benefits from the pruning system, namely, that of preventing the caterpillars from accumulating in the plants in the way they did last year in the months of June and July, also that of preventing it from blossoming and bearing in the rainy months, as the cotton picked during that time is of an inferior quality; besides, the plant being exhausted yields very lightly in the dry season, during which time it is desirable to pick the whole crop if possible.

4th. I have now got 42 plants growing from seed procured from crossed cotton, some of which are in flower, and others loaded with bolls, a few of which I have already pulled, the wool of which was of a fine long staple, but much injured by rain and a small insect that had got into the bolls and stained the cotton very much, also destroyed the seed, but I expect in the course of a month or two, if we have any dry weather, to save seed enough to plant out a small patch of it, which would bear in the dry season, and therefore enable us to judge better of the quantity as well as quality of cotton that may be expected from it, besides the advantage of getting good seed.

Dacca Government Farm,
1 June 1847.

I have, &c.
(signed) *J. O. Price,*
Govt. Cotton Planter.

Commissioner's Office, Dacca Division,
Dacca, 15 June 1847.

(True copy.)
(signed) *W. H. Jones,*
Assistant.

EXTRACT from the Proceedings of the Government of Bengal, in the Revenue Department, under date 18 August 1847.

(No. 242.)

No. 17. From the Secretary to the Sudder Board of Revenue to *F. J. Halliday, Esq.*, Secretary to the Government of Bengal, Revenue Department, dated Fort William, 21st July 1847.

Sir,

Miss. Dept.
Present:
J. Lewis, Esq. and
E. M. Gordon, Esq.

I AM directed by the Sudder Board of Revenue to request that you will submit, for the information of his Honour the Deputy Governor, the accompanying letter, No. 67, dated the 1st instant, from Mr. *J. O. Price*, being that gentleman's report on the experimental cultivation of cotton for the month of June last.

I have, &c.
(signed) *G. Plowden,* Secretary.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 183

(No. 67.)

From *J. O. Price*, Esq., Government Cotton Planter, to *J. Dunbar*, Esq., Commissioner of Dacca.

I.
Bengal and
North Western
Provinces.
No. 18.

Sir,

I HAVE the honour to submit to you, for the information of the Honourable the Deputy Governor of Bengal, the monthly report of my proceedings for the month of June.

The weather from the 1st instant until the 18th having been almost a continuation of heavy rains, enables me only to report partially of the ryottee cultivation, having been only able in the latter end of the month to visit Burrybarry and Quinamundul in Mymensing district, at both of which places I found the young cotton very promising.

All the cotton in the farm, with the exception of a few biggahs that are in a low situation, and have suffered from the late heavy rains, now looking very healthy and growing fast; and, I am happy to add, has, as yet, escaped the caterpillars. The coolies have been engaged all this month in weeding and moulding the young cotton planted in April and May, with the exception of a few hands occasionally picking cotton.

Dacca Government Farm,
1 July 1857.

I have, &c.
(signed) *J. O. Price*,
Govt. Cotton Planter.

Commissioner's Office, Dacca Division, Dacca,
8 July 1847.

(True copy.)
(signed) W. H. Jones, Assistant.

EXTRACT from the Proceedings of the Government of Bengal in the Revenue Department, under date 25 August 1847.

(No. 266.)

From the Secretary to the Sudder Board of Revenue to *F. J. Halliday*, Esq., Secretary to the Government of Bengal, Revenue Department, dated Fort William, 19 August 1847.

No. 7.

Sir,

I AM directed by the Sudder Board of Revenue to request that you will submit, for the consideration of his Honour the Deputy Governor, the accompanying letter, No. 74, dated the 1st instant, from Mr. J. O. Price, being his report on the experimental cultivation of cotton for the month of July last.

Miss. Dept.
Present:
J. Lewis, Esq. &
E. M. Gordon, E

I have, &c.
(signed) *G. Plowden*, Secretary.

(No. 74 of 1847.)

From *J. O. Price*, Esq., Government Cotton Planter, to *J. Dunbar*, Esq., Commissioner of Dacca Division.

No. 8.

Sir,

THE month of July having expired, I have the honour of informing you that no change of any consequence has taken place in the management of either the neej or ryottes cotton cultivation under my charge from that of the preceding month. I therefore refrain from trespassing on the Honourable the Deputy Governor's time, and on that of your own, by submitting to you a repetition of my June report.

Dacca Government Farm,
1 August 1847.

I have, &c.
(signed) *J. O. Price*,
Govt. Cotton Planter.

Commissioner's Office, Dacca Division, Dacca,
5 August 1847.

(True copy.)
(signed) W. H. Jones, Assistant.

184. PAPERS RELATING TO MEASURES TAKEN SINCE 1847

I.
Bengal and
North Western
Provinces.

15th or Dacca
Division.
Regarding the
experimental cot-
ton cultivation at
Dacca.
Revenue Proceed-
ings, 18th August
1847, Nos. 16 to
19.

EXTRACT from a General Letter from the Government of Bengal to the Hon. the Court of Directors in the Revenue Department, No. 14, of 1848, dated 27th September.

35. As required by Government Orders of the 28th April 1847, the Office of Account submitted a statement, showing the expenses incurred during the year 1846-47, on account of the experimental cotton cultivation at Dacca, under Mr. J. O. Price, Government cotton planter.

36. Sir Herbert Maddock felt constrained to bring to the notice of the Supreme Government the unsatisfactory progress made in this experiment.

37. Herewith are forwarded Mr. Price's reports * on the cotton cultivation at Dacca for the months of August, September, October, November and December 1847, and January 1848.

38. The Toke farm, it will be seen, has been abandoned, the soil not being well adapted for the growth of good cotton, and for the future the experiment will be tried in localities more suitable for carrying it on.

39. The Board have been called upon to report as to the prospects of any successful and profitable result being obtained from Mr. Price's experiments, and as to the expediency of continuing them for any longer period.

(No. 631.)

From the Officiating Under Secretary to the Government of Bengal to the Secretary to the Government of India, Home Department.

Sir,

Revenue.

WITH reference to the resolution of the Supreme Government, dated the 23d August 1843, received with Mr. Officiating Secretary Davidson's letter, No. 40, of that date, the honourable the Deputy Governor of Bengal desires to bring to the notice of the Supreme Government the progress of the experimental cotton cultivation conducted under Mr. Price, which his Honour cannot regard as satisfactory. I am directed accordingly to forward the accompanying abstract of Mr. Price's reports from January 1846 to the end of April 1847, together with a statement of the charges incurred on account of the cultivation for the year ending the 30th April last.

I have, &c.
(signed) *William Grey*,
Offg. Under Secy. to Govt. of Bengal.

Fort William, 16 August 1847.

ABSTRACT.

January 1846. At the farm at Toke, preparing the land, and planting the same with cotton seed, as well as finishing, cleaning, moulding the young cotton plants.
February 1846. No seed planted this month, and all the cotton planted since last October has suffered very much from the ravages of the caterpillar.
March 1846. Mr. Price visited all the places at which ryottee cotton cultivation is carried on, and with the exception of nine beegahs, found the cultivation totally destroyed by insects. In the farm, coolies have been employed in preparing land to receive seed.
April 1846. Coolies employed in procuring satee from a neighbouring indigo factory to the farm, to be used as manure in the land.
May 1846. Coolies employed in manuring, and in moulding the young cotton plants, as well as in preparing land for seed, and in planting some partly with Bourbon and partly with American seed. Planting indigenous seed on some of the land already planted with exotic seed has also been resorted to at the farm, in order to make a trial of the crossing system.

Mr.

* Mr. Price's reports regarding the cotton cultivation.—Revenue Proceedings, 13th October 1847, Nos. 5 and 6. Revenue Proceedings, 15th December 1847, Nos. 19 to 21. Revenue Proceedings, 1st December 1847, Nos. 11 and 12. Revenue Proceedings, 2d February 1848, Nos. 11 and 12. Revenue Proceedings, 16th March 1848, Nos. 8 and 9. Revenue Proceedings, 29th March 1848, Nos. 17 and 18.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 185

	I. Bengal and North Western Provinces.
Mr. Dunbar states that he has visited the experimental farm at Toke, and that in those places where the caterpillar had appeared only a sickly plant was to be seen, but that in other places the cotton looked remarkably healthy and was for the most part in flower. Mr. Price reports that the growth of the plant had been very rapid this month, and that he received very favourable accounts from all quarters. Want of seed complained of. Several parcels of cotton of different kinds are in course of preparation, for the purpose of being sent to England. The samples were shipped on the "Ellenborough" last January.	June 1846.
At the farm land being prepared, and cotton seed planted. The cotton does not appear so healthy as it did the last month, owing to the sudden change from excessive rain to heat. The same is said of the cotton at Tagoreah; but at Lukypore and Foolbarreah the cotton continues to look healthy.	July 1846.
The ravages of the green caterpillar, on the cotton sown in the farm, appear to be very extensive, and to have been confined almost entirely to the American cotton. The Commissioner is of opinion that the Bourbon cotton is more likely to do well in Eastern Bengal than any other description of exotic cotton, but that the Bengallee cotton is unquestionably that which will best answer.	August 1846.
A very favourable report is given of the cotton plant at the farm which suffered so much from the green caterpillar. The whole, with exception of about two begahs, having entirely recovered its leaf, and being in full flower. The Bourbon seed, planted in June on the red kunkur soil, looks the most promising. A few beegahs have been planted with the fine Dacca cotton, and land is being prepared for the Patna seed.	September 1846.
On account of the heavy rains, no particular progress reported.	October 1846.
At the farm land has been under preparation, and some of it planted with the Patna native cotton seed. The crossing system has not succeeded so well as was expected; ascribed by Mr. Price to his not being fully acquainted with the system.	November 1846.
The cold appears to have had a bad effect upon the cotton growing at the farm. Mr. Price speaks despondingly of the experiment, as far as regards the growth of foreign cotton, and recommends that the present experiments be confined more to the aborigines cotton of the country. Seed has been distributed plentifully for ryottee cultivation, and the usual work has been going on at the farm.	December 1846.
The cold continuing, no change has taken place in the cultivation. A number of ryots in the Mymensingh district has offered to take advances to cultivate the indigenous cotton on a limited scale, furnishing security for the advances made.	January 1847.
On the whole, the state of cultivation appears to be much the same as that described in the last two or three reports.	February 1847.
The weather continued dry all this month, except the occurrence of a severe gale on the evening of the 27th, attended with some rain, but not sufficient to commence planting. Coolies employed in cleaning off jungle in a piece of high rent land for planting in the rainy season. In two of the several places under ryottee cotton cultivation, visited by Mr. Price, the plants were looking healthy, and had not suffered by the drought.	March 1847.
Continued dry weather; heavy fall of rain on the 16th; since which the coolies were employed in planting the prepared land, cleaning and supplying the young, and pruning the old cotton plants. The high lands prepared for seed will be planted early in the ensuing month. The persons to whom advances were made in October last now engaged either in cleaning and supplying the lands then planted, or in planting newly prepared land. A portion of the Patna seed planted in two places where the land had been prepared for it when it arrived, has produced the finest looking Bengallee cotton yet seen.	April 1847.

(signed) Wm. Grey,
Offg. Under Secy. to the Govt. of Bengal.

(No. 132.)

From *W. Maples*, Esq., Officiating Extra Assistant Accountant, Government of Bengal, Revenue Department, to *F. J. Halliday*, Esq., Secretary to the Government of Bengal, Revenue Department.

Sir,

In obedience to the orders of his Honor the Deputy Governor of Bengal, conveyed in Mr. Under Secretary Beadon's letter to the address of the Accountant, of the 28th April last, I have now the honour to submit the statement as per margin.*

Fort William, 21 July 1847.

I have, &c.
(signed) *W. Maples*,
Offg. Extra Assist. Acc. Govt. of Bengal.

* Statement showing the expenses incurred during the year 1846-47 on account of the experimental cotton cultivation at Dacca under Mr. J. O. Price, Government Cotton Planter.

I.
Bengal and
North Western
Provinces.

STATEMENT showing the EXPENSES incurred during the Year 1846-47, on Account of the Experimental COTTON CULTIVATION at *Dacca*, under Mr. *J. O. Price*, Government Cotton Planter, required in Mr. Under Secretary *Beadon's* Letter of the 28th April 1847, No. 308.

	<i>Rs.</i>	<i>a.</i>	<i>p.</i>	<i>Rs.</i>	<i>a.</i>	<i>p.</i>
Salary of <i>J. O. Price</i> , Government cotton planter, from March 1846 to February 1847, at 450 rupees, as per <i>Dacca</i> Treasury accounts, from May 1846 to April 1847	-	-	-	5,400	-	-
Establishment under ditto from ditto to ditto, at 42 rupees	-	-	-	504	-	-
Godown rent	32	-	-			
Miscellaneous Contingencies, viz. :—	<i>Rs.</i>	<i>a.</i>	<i>p.</i>			
Cooley hire	942	5	6			
Charges for minding cattle	-	29	-			
Ditto for carpenter's, &c., work	101	8	-			
Boat hire	-	39	2			
Charges for keeping elephants	119	2	-			
Purchase of bags for keeping cotton	3	11	6			
Ditto of oil-cakes	10	-	-			
Ditto of arsenic for killing rats in the godown	1	-	-			
				1,245	13	-
Rent of lands occupied by the cotton farm				93	12	-
Purchase of stationery				4	-	-
Purchase of cotton seeds				14	8	-
Advances to individuals for cultivating cotton				222	8	-
Export Warehouse :						
January 1847 : Charges on <i>Dacca</i> cotton						7,516 9 -
February 1847 : Ditto - - ditto				1 2 6		
				4 12 -		
						5 14 6
				<i>Co's. Rs.</i>		7,522 7 6

(Errors excepted.)

Fort William, Accountant's
Office, Revenue Department,
21 July 1847.

(signed) *W. Maples*,
Offg. Extra Assist. Acct. Govt. of Bengal.

(True copies.)

(signed) *Wm. Grey*,
Offg. Under Secy. to the Govt. of Bengal.

EXTRACT from the Proceedings of the Government of Bengal in the Revenue Department, under date the 13th October 1847.

(No. 324.)

No. 5. From the Secretary to the Sudder Board of Revenue to *F. J. Halliday*, Esq., Secretary to the Government of Bengal, Revenue Department, dated Fort William, the 5th October 1847.

Sir,

I AM directed by the Sudder Board of Revenue to request that you will submit for the consideration of his Honor the Deputy Governor, the accompanying letter, No. 79, dated the 1st September last, being Mr. *J. O. Price's* report on the experimental cultivation of cotton for the month of August last.

Miss. Dept.
Present :
J. Lewis, Esq. and
E. M. Gordon, Esq.

I have, &c.
(signed) *Geo. Plouden*, Secretary.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 187

(No. 79 of 1847.)

From *J. O. Price, Esq.*, Government Cotton Planter, Dacca, to *J. Dunbar, Esq.*,
Commissioner of Revenue, Fifteenth Division, Dacca.

I.
Bengal and
North Western
Provinces.
—
No. 6.

Sir,

I HAVE the honour to submit to you, for the information of the Honourable the Deputy Governor of Bengal, the monthly report of my proceedings for the month of August 1847.

I have much pleasure in being enabled to state that nearly all the lands planted with Patna seed, booth neej and ryottee, continue to look very healthy; and having escaped any injury from the caterpillars or other insects up to the present date, I am in great hopes, from the superior appearance it has to that of the kinds usually planted in this district, and the favourable opinion that the ryots have of it at present, that they will be induced to continue the cultivation of it. The small quantity of Bourbon cotton we have on the farm, also looks very well at present, as also the greater part of the American, although the stiff lands in the northern part of this district are not so well suited for its growth, as I am in hopes we will find the chur lands to the southward.

Dacca Government Farm,
1 September 1847.

I have, &c.
(signed) *J. O. Price*,
Government Cotton Planter.

Commissioner's Office, Dacca Division, Dacca,
21 September 1847.

(True copy).

(signed) *W. H. Jones*, Assistant.

EXTRACT from the Proceedings of the Government of Bengal, in the Revenue Department, under date the 15th December 1847.

(No. 373.)

From the Secretary to the Sudder Board of Revenue, to *T. J. Halliday, Esq.*,
Secretary to the Government of Bengal, Revenue Department, dated Fort
William, 23 November 1847.

No. 19.

Sir,

I AM directed by the Sudder Board of Revenue to request that you will submit, for the consideration of his Honor the Deputy Governor the accompanying letter, No. 163, dated the 6th instant, from the Commissioner of Dacca, and its enclosure, regarding Mr. *J. O. Price's* experimental cultivation of cotton during the month of September last.

Miss. Dept.
Present
J. Lewis, Esq. and
E. M. Gordon, Esq.

2. The Board fully concur in the Commissioner's recommendation that Mr. *Price* be allowed to withdraw gradually from the Toke farm, and transfer his experiments to localities where experience may lead him to look for more success in the cultivation of cotton.

I have, &c.
(signed) *Geo. Plowden*,
Secretary.

(No. 163 of 1847.)

From *J. Dunbar, Esq.*, Commissioner of Dacca, to the Sudder Board of Revenue, Fort
William.

No. 20.

Gentlemen,

HEREWITH I have the honour to forward Mr. *Price's* report for the month of September last. Mr. *Price* states in a separate letter that we was unable to submit the report sooner, in consequence of having been engaged in a tour of inspection over the ryottee cultivation in various quarters. No. 84, dated 1 October 1847.

2d. It is very satisfactory to find, from what Mr. *Price* says, that the Patna seed is thriving so well on the light soils, and is so well thought of by the ryots. If we can but afford proof of its being a profitable crop, by even one good harvest, I apprehend we shall have more applications to take up the cultivation than we might find it convenient all at once to comply with.

296—Sess. 2.

A A 2

3d. From

I.
Bengal and
North Western
Provinces.

* Chur Bukhtabullee.

3d. From several conversations I have lately had with Mr. Price, I find that he has come to the conclusion that the soil upon the Toke farm is too stiff for the growth of good cotton; I have it therefore in view gradually to withdraw from that locality, and to transfer our experiments to places where experience leads Mr. Price to think we are likely to be more successful. With my sanction Mr. Price has already given up a portion of the land at Toke, and has engaged an area of about the same extent, on an old chur* (not liable to be carried away by the river), about eight miles below Dacca. As soon as the crop now on the ground at Toke can be gathered in, I would abandon that place altogether, bringing down the huts and out-offices at Bukhtabullee, which can be done at a trifling expense, the whole being of such materials as can be easily taken to pieces and put together again. I am disposed to think that the size of the experimental farm may also with advantage be reduced; 50 or 60 beegahs of good land, I think, would afford ample space in which to go on with mere experiments, while I am convinced that the shortest and surest method of solving the problem whether Eastern Bengal can raise a description of cotton in every way suited to the English market, is to have the superintendent traversing the country in every direction, and getting the ryots to lay down a few beegahs in cotton wherever he may see reason to think that it would thrive.

4th. Heretofore Mr. Price has been taught to believe that the success of his exertions was to be estimated mainly by the results of his experiments on the Toke farm; I would now have him direct his attention more particularly to the ryottee cultivation in various parts of the district. He has already got a footing in several places, and as the intentions of Government are now better and more generally understood, and Mr. Price himself well known, I think no difficulty need be apprehended in getting the ryots to enter into engagements whenever it may be deemed advisable to try the cultivation of cotton.

5th. Should your Board see no reason to question the correctness of my views, I solicit the sanction of Government to such a modification in the plan heretofore in use as I have just pointed out and recommended.

I have, &c.

(signed) J. Dunbar,
Commissioner of Rev.

Commissioner's Office, Dacca Division,
6 November 1847.

(No. 84 of 1847.)

From J. O. Price, Esq., Government Cotton Planter, to J. Dunbar, Esq., Commissioner of Dacca Division, Dacca.

Sir,

I HAVE the honour to submit to you, for the information of the Honourable the Deputy Governor of Bengal, the monthly report of my proceedings for the month of September 1847.

In the early part of this month I again visited the several places on the Dullesary, at which I have tried ryottee cultivation with Patna seed, which continues to be very promising in every place where proper attention has been paid to it, and prevented from being injured by trespass by stock, to which there is too little attention paid in this part of India. On my return to the Government farm I next visited Burrybarree, on the Burrumpooter, at which place we have five beegahs of particularly fine young cotton, also of the Patna kind, and from thence I returned to the farm, where, much to my regret, I found the ryots that had taken advances for twenty beegahs of ryottee cultivation in Mymensing district, waiting my return to know what was to be done, as the cotton grown by them from Patna seed, which I had seen a short time before looking most healthy, was now withering away fast, and the leaves dropping off it, which on examination I found to be too true, and I am sorry to add, that eighteen beegahs of the same kind of cotton on the farm is now in the same state; it therefore appears that heavy stiff land is not suited for the growth of that kind of cotton, both of the places at which it has failed being of that description of land; but I am happy to add, that in a lighter description of soil it promises at present to become a very profitable crop. The ryots where it has succeeded say they never saw any cotton equal to it in this district, and numbers are now anxious to secure advances for May planting (which is the best season for planting cotton in this district, in my opinion, as the October crop only comes to perfection in the commencement of the rains, and therefore is little better than a lost crop). I am happy in mentioning this increased disposition in the natives to grow cotton, as it leads me to hope that, with the assistance of ryottee cultivation, they will soon be induced to grow cotton as a general crop on their own account, at least, in districts that have got lands suited for the growth of it.

In consequence of having been disappointed in the farm with Patna cotton seed, in addition to that of the American and Bourbon kinds that we have had in cultivation since the farm was settled, never having yet yielded half an average crop, I beg leave to state that I have thought it advisable to give up a portion of the one hundred and twenty-five beegahs of land we have in the Toke farm, and procure an equal quantity of land to that given up of chur land, in the southern part of the district (as it appears from several small experiments

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 189

I.
Bengal and
North Western
Provinces.

experiments we have tried to be better suited for cotton cultivation than that to the northward), and establish a small farm there, which I will be able to do at a very trifling additional expense, if any, to Government, by removing some huts not now required at the Toke farm to the chur land, and the rent of the land I have given up to ryots will, I expect, be equal to that of about forty beegahs of chur land that I have been able to procure, a portion of which I have now commenced cultivating, and in April I purpose giving up the Toke farm entirely, and confining the Neej cultivation to a small chur farm, for experimentalising with the different kinds of cotton seed that we may be able to procure, and afterwards distributing the seed among the natives; by increasing the ryottee cultivation, I am of opinion it would be the means of inducing the ryots to turn their attention to the cultivation of cotton more generally, besides being the safer way for Government, as the ryots are bound by agreement to deliver me in good cotton the value of their advances. Hoping that my views on this subject may meet with the approbation of Government,

Dacca Govt. Farm,
1 October 1847.

I have, &c.
(signed) *J. O. Price,*
Govt. Cotton Planter.

(True copy.)

Commissioner's Office, Dacca Division,
Dacca, 6th Nov. 1847.

(signed) *R. Pereira,*
Officiating Assistant.

(No. 950.)

From *W. Grey*, Esq., Officiating Under Secretary to the Government of Bengal, to
Secretary Sudder Board of Revenue.

No. 21.

Sir,

I AM directed to acknowledge the receipt of your letter No. 373, of the 23d ultimo, with enclosures, and in reply, to state that the Deputy Governor approves of the recommendation therein conveyed for the abandonment of the cotton farm at Thoke. The Deputy Governor is likewise disposed to concur generally in the views expressed by the Commissioner in the concluding portion of para. 3 of his letter to the Board's address, with respect to the principle upon which the cultivation is to be carried on for the future.

I am instructed to add, that his Honor would be glad to learn the Board's opinion, founded upon a review of Mr. Price's proceedings, and the outlay which has attended them since he commenced his operations in the Dacca district, as to the prospect of any successful and profitable result being obtained from his experiments, and consequently the expediency of continuing them for any longer period.

The enclosures of your letter are returned, copies having being kept for record.

Fort William,
13 December 1847.

I have, &c.
(signed) *W. Grey,*
Offg. Under Secy. to the Govt. of Bengal.

EXTRACT from the Proceedings of the Government of Bengal in the Revenue
Department, under date 1 December 1847.

(No. 381.)

From the Secretary to the Sudder Board of Revenue to *F. J. Halliday*, Esq.,
Secretary to the Government of Bengal, Revenue Department, dated Fort
William, 26 November 1847.

No. 11.

Sir,

I AM directed by the Sudder Board of Revenue to request that you will submit, for the consideration of his Honor the Deputy Governor, the accompanying letter in original, No. 88, dated the 1st instant, being Mr. J. O. Price's report on the experimental cultivation of cotton for the month of October last.

Miss. Dept.
Present :
J. Lewis, Esq. and
E. M. Gordon, Esq.

I have, &c.
(signed) *Geo. Plowden*, Secretary.

190 PAPERS RELATING TO MEASURES TAKEN SINCE 1847

I.
Bengal and
North Western
Provinces.

No. 12.

(No. 88 of 1847.)

From *J. O. Price*, Esq., Government Cotton Planter, Dacca, to *J. Dunbar*, Esq.,
Commissioner of Dacca Division.

Sir,

I HAVE the honour to submit to you, for the information of the Honourable the Deputy Governor of Bengal, the monthly report of my proceedings for the month of October.

The few coolies on the farm at Toke have been engaged all this month in cleaning the cotton field and picking cotton, when required, and the coolies on the chur land, in preparing land for planting, when the weather would permit of their doing so, the early part of the month having been anything but favourable for that purpose. I have now about eight biggahs planted, principally with Bourbon seed, which has vegetated well.

I have visited the several places at which the Patna seed has succeeded, and I have pleasure in stating that its present yielding and appearance fully bear me out in my anticipations, in my last report, that, to those who have land suited to its growth, it will prove a very profitable crop; at one place in particular I found it eight and ten feet high, and bearing until the weight of the bolls was nearly overcoming the strength of the plants.

Dacca Government Farm,
1 November 1847.

I have, &c.
(signed) *J. O. Price*,
Government Cotton Planter, Dacca.

Commissioner's Office, Dacca Division, Dacca,
12 November 1847.

(True copy.)
(signed) *R. Pereira*, Offg. Assist.

EXTRACT from the Proceedings of the Government of Bengal, in the Revenue Department, under date the 16th March 1848.

(No. 5.)

No. 8. From the Secretary to the Sudder Board of Revenue to *F. J. Halliday*, Esq., Secretary to the Government of Bengal, Revenue Department, dated Fort William, 8 January 1848.

Miss. Dept.
Present:
J. Lewis, Esq. and
E. M. Gordon, Esq.

Sir,

I AM directed by the Sudder Board of Revenue to request that you will submit, for the consideration of his Honor the Deputy Governor, the accompanying letter, No. 190, dated the 27th ultimo, and its enclosure, from the Commissioner of Dacca, being Mr. *J. O. Price*'s report on the experimental cultivation of cotton, for the month of November last.

I have, &c.
(signed) *Geo. Plowden*, Secretary.

(No. 190 of 1847.)

No. 9. From *J. Dunbar*, Esq., Commissioner of Dacca, to the Sudder Board of Revenue, Fort William.

Gentlemen,

HEREWITH I have the honour to transmit Mr. *Price*'s cotton report for the month of November 1847. It is chiefly occupied with an account of his visit to the Tipperah hills; but Mr. *Price* has altogether omitted to give any opinion as to the expediency and practicability of getting the hill people to take up the cultivation of any of the exotic cotton. His attention will be called to the omission.

Commissioner's Office, Dacca Division,
Dacca, 27 December 1847.

I have, &c.
(signed) *J. Dunbar*,
Commissioner of Revenue.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 191

(No. 95 of 1847.)

From *J. O. Price*, Esq., Government Cotton Planter, Dacca, to *J. Dunbar*, Esq.,
Commissioner of Dacca Division.

I.
Bengal and
North Western
Provinces.

Sir,

1 December 1847.

I HAVE the honour to submit to you, for the information of the Honourable the Deputy Governor of Bengal, the monthly report of my proceedings for the month of November.

From the 1st until the 15th instant, the coolies on the chur lands continued to be employed in preparing land, and planting it with Bourbon and American seed, by which time they had about 25 beegahs planted, and, as the season was getting late, I did not think it advisable to plant any more until the months of April and May; the coolies have therefore been engaged for the remainder of the month in making fences, and cleaning and supplying the land first planted. The few coolies on Toke farm continue to be employed, as stated in my last report.

On the 15th instant I left this district for the purpose of visiting the Tipperah hills, in the neighbourhood of Commillah, at which place I arrived on the 18th, and on the following day proceeded by elephant to visit some of the districts on the hills, where I was informed the natives cultivated cotton; but, from the natives I had with me as guides not being well acquainted with that part of the district, I was very unsuccessful the first day, but the second and third I was more fortunate, having been enabled to visit three of their small settlements, at each of which I found them engaged in picking their cotton, the crop of which is very deficient this year, having suffered much from the heavy rains in October, as also from the late rains this month. The system of cultivation pursued by the natives on the hills is very simple. That part of the country being overgrown with a small kind of bamboo, it is cut down in the months of February and March, and allowed to remain until dry, when it is burnt off the land, which leaves it quite clean and ready for planting, besides giving them the advantage of the ashes as manure; and, as soon as the rains commence, they open small holes with the hoe at irregular distances from each other, but generally from 12 to 18 inches apart, into which they drop a few cotton seeds, with the seed of any other mixed crop that they wish to cultivate with it, such as rice, chillies, &c., &c., and cover them lightly with mould. This is all the cultivation they give, unless the jungle has grown too quickly, in case of which it is simply cut down. From all the information I could obtain from them, I understand they get about five maunds of cotton to the beegah in a favourable season, in addition to which, their crops mixed with it is equal to about one maund of cotton. This should pay them well for their cultivation; but, unfortunately, they can only cultivate for one or two years in succession the same land. This appears to be occasioned by the quick descent of the hills, and the surface of the land being composed in a great measure of reddish sand, so that, when exposed to heavy rains, the surface is washed off, and only the red clay left, of which the strata immediately under the surface consists. They are, therefore, obliged to be constantly changing their place of abode, which must not only be a great inconvenience, but also a loss to them, although they do not complain of it as any particular hardship. The kind of cotton they plant is called the bogah: it is rather short in staple, but strong; and, from the large size of the bolls, they are enabled to pick it clean, which is a great matter, and very difficult to do with the small Bengallee kinds.

I have, &c.

(signed) *J. O. Price*,
Government Cotton Planter, Dacca.

EXTRACT from the Proceedings of the Government of Bengal, in the Revenue Department, under date the 2d February 1848.

(No. 35.)

From the Secretary to the Sudder Board of Revenue, to *F. J. Halliday*, Esq.,
Secretary to the Government of Bengal, Revenue Department.

No. 11.

Sir,

Fort William, 31 January 1848.

I AM directed by the Sudder Board of Revenue to request that you will submit, for the consideration of the Right Honourable the Governor of Bengal, the accompanying letter, No. 4, dated the 1st instant, from Mr. *J. O. Price*, being that gentleman's report on the experimental cultivation of cotton for the month of December last.

Miss. Dept.
Present:
J. Lewis, Esq. and
E. M. Gordon, Esq.

2d. The Commissioner hopes soon to submit the special report called for by Government orders of the 13th ultimo, No. 950.

I have, &c.

(signed) *Geo. Plowden*, Secretary.

I,
Bengal and
North Western
Provinces.
No. 12.

(No. 4).

From *J. O. Price*, Esq., Government Cotton Planter, to *J. Dunbar*, Esq., Commissioner of Dacca.

Sir,

I HAVE the honour to submit to you, for the information of the Honourable the Deputy Governor of Bengal, the monthly report of my proceedings for the month of December.

2d. The coolies employed on the chur farm have been partly engaged this month in weeding and moulding, and supplying the young plants (which are now looking very healthy and in growth equal to any plants I ever saw in America of the same age); the remainder of the month they have been employed in making fences. Having lately visited the Toke farm, and found the cotton suffering much from the extreme stiffness of the land, so much so that on examination the roots appeared to be perfectly earth bound, and which I have no doubt was the cause of the cotton having the same unhealthy appearance at this season last year, when it should have been in full bearing; this evil we will not have to contend with on the chur land, which is of a free soil, and easily cultivated at all seasons of the year.

3d. In continuation of my remarks in my last month's report respecting Tipperah district, I beg leave to add that I would not recommend Government going into much expense this year in experimental cotton cultivation in that district; but, instead of which, to supply the Rajah with a few maunds of cotton seed of superior kinds to that now grown on the hills, and to have it introduced, through his interest, among the natives, which he was kind enough to say, some time ago, when spoken to on that subject, that he would have much pleasure in ordering to be done, by which means we would be enabled to judge, by January next, what inducement there was likely to be to introduce other kinds of seed and an improved system of cultivation into that district.

Dacca Government Farm,
1 January 1848.

Commissioner's Office, Dacca Division, Dacca,
18 January 1848.

I have, &c.
(signed) *J. O. Price*,
Government Cotton Planter.

EXTRACT from the Proceedings of the Government of Bengal, in the Revenue Department, under date 29 March 1848.

(No. 92.)

No. 17.

From the Secretary to the Sudder Board of Revenue to *F. J. Halliday*, Esq., Secretary to the Government of Bengal, Revenue Department, dated Fort William, 22 March 1848.

Sir,

Miss. Dept.
Present:
J. Lewis, Esq. and
E. M. Gordon, Esq.

I AM directed by the Sudder Board of Revenue to request that you will submit, for the information of the Right Honourable the Governor of Bengal, the accompanying letter, No. 40, dated 2d instant, and its enclosures, from the Commissioner of Dacca, being a report on Mr. Price's experimental cultivation of cotton for the month of January last.

I have, &c.
(signed) *Geo. Plowden*,
Secretary.

(No. 40.)

No. 18.

From *J. Dunbar*, Esq., Commissioner of Dacca, to the Sudder Board of Revenue, Fort William.

Gentlemen,

I HAVE the honour to transmit a copy of Mr. Price's report, No. 17, dated 1st ultimo, of his proceedings in regard to the cultivation of cotton for January last, which does not seem to call for any remarks.

Commissioner's Office, Dacca Division,
Dacca, 2 March 1848.

I have, &c.
(signed) *J. Dunbar*,
Commissioner of Revenue.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 193

(No. 17 of 1848.)

From *J. Q. Price*, Esq., Government Cotton Planter, to *J. Dunbar*, Esq., Commissioner of Revenue, Dacca.

I.
Bengal and
North Western
Provinces.

Sir,

I HAVE the honour to submit to you, for the information of the Right Honourable the Governor-General of India, the monthly report of my proceedings for the month of January.

2. The employment of the coolies on the Chur farm has been the same this month as that of last, and the few coolies employed on Toke farm have been principally engaged in pulling down the houses there, and preparing everything for a total removal to Bucktabully Chur farm, so as to enable me to abandon that farm entirely next month.

Government Farm,
1 Feb. 1848.

I have, &c.
(signed) *J. O. Price*, Govt. Cotton Planter,

Commissioner's Office, Dacca Division, Dacca,
2 March 1848.

EXTRACT from a General Letter from the Government of Bengal to the Honourable the Court of Directors, in the Revenue Department (No. 17 of 1848), dated the 8th October.

PARA. 25. Herewith are forwarded Mr. Price's Reports of Experimental Cotton Cultivation during the months of February, March, and April.*

15th or Dacca
Division.

25A. An outlay of upwards of 30,000 rupees has been incurred in carrying on the experimental culture of cotton, under the management of Mr. Price.

Experimental of
cotton cultivation
at Dacca.

26. Although the result has hitherto been unsuccessful and unprofitable, I was still desirous that the experiment should be continued for the present; it will, however, be confined to the Bourbon and Patna cotton, particularly the latter, the culture of which has been attended with favourable results.

27. Measures have been taken for supplying Mr. Price with fresh Bourbon and Patna cotton seed, and I have acceded to the Commissioner Mr. Dunbar's proposition for substituting quarterly for monthly reports.

EXTRACT from the Proceedings of the Government of Bengal in the Revenue Department, dated the 12th April 1848.

(No. 102.)

From the Secretary to the Sudder Board of Revenue to *F. J. Halliday*, Esquire, Secretary to the Government of Bengal, Revenue Department; dated Fort William, the 6th April 1848.

No. 3.

Sir,

I AM directed by the Sudder Board of Revenue to request that you will submit, for the consideration of the Right Honourable the Governor of Bengal, the accompanying letter (No. 21), dated the 1st ultimo, from Mr. J. O. Price, being that gentleman's report on the experimental cultivation of cotton for the month of February last.

Mis. Dept.
Present:
J. Lewis and
E. M. Gordon,
Esqrs.

Sudder Board of Revenue.

I have &c.
(signed) *G. Plowden*, Secretary.

(No. 21 of 1848.)

No. 4.

From *J. O. Price*, Esquire, Government Cotton Planter, to *J. Dunbar*, Esquire, Commissioner of Dacca Division.

Sir,

I HAVE the honour to submit to you, for the information of the Right Honourable the Governor-general of India, the monthly report of my proceedings for the month of February.

2. I have been employed all this month in making arrangements for ryottee cultivation, and in removing the Toke establishment to Bucktabully Chur.

I have

* Revenue Proceedings: 12 April 1848, Nos. 3 & 4; 10 May 1848, Nos. 25 & 26; 7 June 1848, Nos. 31 & 32; 26 April 1848, Nos. 2 to 9.

I.
Bengal and
North Western
Provinces.

3. I have much pleasure in stating that the cotton planted early in November on the chur land continues to stand the dry weather well, and as it is now in a very healthy growing state, I am in great hopes it will succeed well, and most particularly so on account of almost any quantity of the same kind of chur land being procurable in this and the neighbouring districts. My proceedings on the chur land this month have been confined to breaking up some land with the plough for April and May sowing.

Government Farm, 1 March 1848.

I have, &c.
(signed) *J. O. Price,*
Government Cotton Planter.

Commissioner's Office, Dacca Division, Dacca,
23 March 1848.

(True copy.)
(signed) R. Pereira, Officiating Assistant.

No orders.

EXTRACT from the Proceedings of the Government of Bengal in the Revenue Department, dated the 10th May 1848.

No. 25.

(No. 127.)

From the Secretary to the Sudder Board of Revenue to *F. J. Hulliday*, Esquire, Secretary to the Government of Bengal, Revenue Department; dated Fort William, 1 May 1848.

Sir,

Mis. Dept.
Present:
J. Lewis and
E. M. Gordon,
Esqrs.

I AM directed by the Sudder Board of Revenue to request that you will submit, for the consideration and orders of the Right Honourable the Governor of Bengal, the accompanying letter (No. 27), dated the 1st ultimo, from Mr. J. O. Price, being that gentleman's report on the experimental cultivation of cotton for the month of March last.

Sudder Board of Revenue. I have, &c.
(signed) *G. Plowden*, Secretary.

No. 26.

(No. 27 of 1848.)

From *J. O. Price*, Esq., Government Cotton Planter, Dacca, to *J. Dunbar*, Esq., Commissioner of Revenue, 15th Division, Dacca.

Sir,

I HAVE the honour to submit to you, for the information of the Right Honourable the Governor-general of India, the monthly report of my proceedings for the month of March.

2. The coolies on the farm have been engaged this month in ploughing and preparing land for seed, and in hoeing and weeding the cotton planted in November, which is now in a very healthy state.

3. My proceedings with respect to the ryottee cultivation this month have been much of the same nature as that stated in my last report.

4. I beg leave to add that, in accordance with the conversation I had the honour of having with you a short time ago, respecting the reduction of the expenses attending the Neej cultivation as far as practicable, that I have dispensed with my sirkar's services, and will thereby only require one person who will act as assistant and writer. I also have returned the elephant to the depôt, as I found I did not require its services on the chur land.

Government Farm, 1 April 1848.

I have, &c.
(signed) *J. O. Price,*
Government Cotton Planter.

Commissioner's Office, Dacca Division, Dacca,
11 April 1848.

(True copy.)
(signed) R. Pereira, Officiating Assistant.

No orders.

TO 'PROMOTE THE CULTIVATION OF COTTON IN INDIA.' 195

EXTRACT from the Proceedings of the Government of Bengal in the Revenue Department, dated 7 June 1848.

(No. 155.)

From the Secretary to the Sudder Board of Revenue to *F. J. Halliday*, Esq., Secretary to the Government of Bengal, Revenue Department; dated Fort William, 30th May 1848.

Sir,

I AM directed by the Sudder Board of Revenue to request that you will submit, for the consideration of the Right Honourable the Governor of Bengal, the accompanying letter (No. 102), dated the 17th instant, and its enclosure from the Commissioner of Dacca, the latter being Mr. J. O. Price's report on the experimental cultivation of cotton for the month of April last.

I.
Bengal and
North Western
Province.

No. 31.

Mis. Dept.
Present:
J. Lewis and
E. M. Gordon,
Esqrs.

Sudder Board of Revenue. I have, &c.
(signed) *G. Plowden*, Secretary.

(No. 102 of 1848.)

From *J. Dunbar*, Esq., Commissioner of Dacca, to the Sudder Board of Revenue, Fort William.

Gentlemen,

I HAVE the honour to submit a copy of Mr. Price's report (No. 35), of the 30th ultimo, of his proceedings in regard to the cultivation of cotton in the month of April last, which does not seem to require any remarks.

2. Mr. Price's reports hereafter shall be furnished quarterly, commencing from the official year 1848-49.

Commissioner's Office, Dacca Division, Dacca,
17 May 1848.

I have, &c.
(signed) *J. Dunbar*,
Commissioner of Revenue.

No. 32.

(No. 35 of 1848.)

From *J. O. Price*, Esq., Government Cotton Planter, to *J. Dunbar*, Esq., Commissioner of Dacca Division.

Sir,

I HAVE the honour to submit to you, for the information of the Right Honourable the Governor of Bengal, the monthly report of my proceedings for the month of April.

2. The hot dry wind that has continued all this month, without any rain, has prevented my being able to plant. Although I have the greater part of the land prepared, there has therefore been no change in the employment of the coolies from that of the previous month.

3. The ryots who have taken advances, have also been engaged in cultivating their lands, and are now only waiting for seed and rain.

Government Farm, 30 April 1848.

I have, &c.
(signed) *J. O. Price*,
Government Cotton Planter.

EXTRACT from the Proceedings of the Government of Bengal in the Revenue Department, dated 26 April 1848.

(No. 51.)

From the Sudder Board of Revenue to *F. J. Halliday*, Esq., Secretary to the Government of Bengal, Revenue Department; dated Fort William, 15th February 1848.

Sir,

WITH reference to Officiating Under Secretary Mr. Grey's letter, No. 950, dated the 13th December last, I am directed by the Sudder Board of Revenue to request that you will lay before the Right Honourable the Governor of Bengal the enclosed correspondence* with the Commissioner of Dacca, relative to the experimental culture of cotton under the management of Mr. J. O. Price.

Mis. Dept.
Present:
J. Lewis and
E. M. Gordon,
Esqrs.

2. It

* Board to Commissioner, 146, of 24 December 1847: Commissioner to Board, No. 15, of 29 ultimo and Enclosure (in original).

I,
Bengal and
North Western
Provinces,

2. It will be seen that up to the close of the past year, nearly 30,000 rupees had been expended upon the experiment, and though no decidedly successful and profitable result has yet been obtained, the Commissioner is far from thinking that the money has been uselessly expended, and is decidedly of opinion that it is advisable to persevere in the experiment. The Patna cotton, he says, is likely to do well in the stiff soils, in the northern parts of the district, and he is particularly anxious to try the Bourbon cotton on an extended scale this year in the lighter soils in the lower part of the district.

3. The Board are scarcely in a position to judge accurately of the value of these experimental proceedings; but they think that, having gone on so long, the expense, about 500 rupees per mensem, may very well be incurred a little longer, and that the Commissioner, Mr. Dunbar, who has paid great attention to the subject and evinced great interest in the proceedings throughout, may be indulged in the way he proposes.

4. If the Right Honourable the Governor should concur in this view it will be necessary to take immediate measures for supplying Mr. Price with 30 or 40 maunds of Bourbon and 25 maunds of Patna seed; the best time for putting the seed into the ground being May and June.

5. The Board would suggest that the Commissioner be informed of the opinions passed by the London merchants on the specimens of cotton sent to England some time back, if any communication on the subject has been received from the Honourable Court. The Commissioner's suggestion of substituting quarterly for monthly reports is also, they think, worthy of adoption.

I have, &c.
(signed) G. Plowden,
Secretary.

No. 2.

(No. 146.)

From the Secretary Sudder Board of Revenue to the Commissioner of Dacca; dated Fort William, 24 December 1847.

Sir,

Miscellaneous.
Present:
J. Lewis and
E. M. Gordon,
Esqrs.

WITH reference to your letter, No. 163, dated the 6th ultimo, submitting the report of Mr. Price's proceedings in September last, I am directed by the Sudder Board of Revenue to transmit the annexed copy of the orders of Government, dated the 13th instant, No. 950, and to request that you will furnish them with a memorandum of the cost which has been incurred from the beginning of the experiment to cultivate cotton, distinguishing Mr. Price's allowances from the other charges, and distributing the latter under convenient heads, as well as exhibiting separately the expenses incurred on the farm, and on the ryottee mode of cultivation. The Board will also expect to receive your opinion on the general question of the expediency of continuing the experiment any longer or not, with the reasons on which your opinion is founded.

I have, &c.
(signed) Geo. Plowden,
Secretary.

(No. 15 of 1848.)

From J. Dunbar, Esq., Commissioner of Dacca, to the Sudder Board of Revenue, Fort William.

Gentlemen,

I HAVE the honour to submit a memorandum of the nature called for in your Board's letter, No. 146, dated the 24th ultimo, showing the entire outlay which has been incurred in carrying out the experiment to cultivate cotton in this district, from the period of Mr. Price's first appointment, up to the close of 1847.

2. The memorandum was drawn up by Mr. Price, and tested by the records in this office and in that of the Collector of Dacca; at first sight I was inclined to return it, as being too little in detail, and not exhibiting separately the expenses incurred on the farm at Toke, but upon further consideration this seemed unnecessary, as it is not probable that your Board are desirous of tracing the items of expenditure in all their varieties throughout the entire period embraced by the statement. It will suffice, I suppose, to state that for the years 1843 and 1844 no expenses are exhibited in columns three and four, because Mr. Price was then engaged in travelling about the country, and acquiring that knowledge of the seasons and the soil, without which he could not venture to commence his operations with any well grounded hope of success, and that the charges on account of the Nerj cultivation, in column three, consist of the wages of the coolies, and of the fixed establishment;

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 197

I.
Bengal and
North Western
Provinces.

the hire of boats, repairs of huts, feeding elephants, and other contingent expenses of the amount exhibited in column four, a portion is irretrievably gone; for some part of it returns have yet to be made by the ryotts, to whom advances have been made.

3. The total amount of expenditure up to the close of the past year falls very little short of 30,000 rupees. Viewed in connexion with an experiment which had resulted in complete failure this would be a large sum, but although we certainly have had little to show, in the way of produce, I am far from thinking that the money has been uselessly thrown away. The experiment, like many similar first attempts, has had a variety of difficulties to contend with; much of the seed sent up from Calcutta turned out bad and did not vegetate; caterpillars and worms attacked the plants in various stages, and committed great havoc among them, and in particular it has been found that the soil at Toke is unsuited to the growth of the exotic cottons; still Mr. Price's labours have not been without their useful results; we have learned from them, and I state this after much conversation with Mr. Price upon the subject, that the Patna cotton is likely to do well in the stiff soils in the northern parts of the district, but that none of the foreign cottons which we have yet had an opportunity of trying are likely to thrive there, or indeed anywhere else, with exception to the Patna, which we think will give abundant returns, if grown on the lighter soils in the lower parts of the district. In proof of this statement, I may observe, that a little plantation of Patna cotton at an indigo factory, to the eastward of Toke, bore produce to such an extent during the past season, that the gentleman in charge expects to be able, with the seed, to lay down about 50 beegahs of it for Mr. Price this year; while a small quantity of Bourbon seed, sown in Mr. Forde's garden at Foolbariah, about 15 miles to the west of Dacca, has during four successive seasons given heavy crops of cotton, the quality of which Mr. Price affirms to be equal, if not superior, to any that he had ever seen in America.

4. I am decidedly of opinion that it is advisable to persevere in the experiment. I am the more anxious that we should go on, as the removal of the farm from Toke to Bukhtabullee will enable me personally to give that attention to Mr. Price's proceedings, which it was out of my power to bestow when he was so far away. I would not have it to be understood that I consider myself capable of suggesting improvements upon Mr. Price's mode of cultivation, but I think the frequent opportunities I shall now have of seeing him and the farm, and the assistance which, from my position, I shall be able to render him in his dealings with the planters, zemindars, and ryotts, in this neighbourhood, will be of much advantage. Mr. Price is a hardworking man, and no doubt a good practical planter, well fitted to superintend the cotton cultivation, if once fairly introduced and established; but it is my duty to state that I do not think him qualified to carry out, to its fullest extent, the object which Government had in view when the present experiment was first resolved on. The chances of success would surely have been greater had the conduct of the experiment been entrusted to a man of scientific acquirements. Mr. Price's experiments do not appear to me to proceed upon any previously arranged system—they are desultory, and unconnected, and as far as I can judge from his reports and conversation, not always regulated by the experience which it is to be supposed he must be acquiring during their progress. A series of experiments having for their object the introduction of a new cultivation, in a tract of country comprising a variety of soils, can scarcely, I apprehend, be prosecuted efficaciously without some measure of botanical and geological knowledge on the part of the person appointed to conduct them.

5. Mr. Price has come to the conclusion, that the best time for putting the seed into the ground is May and June. I am particularly anxious to try the Bourbon cotton on an extended scale this year; I have therefore urgently to request that measures may be immediately taken for procuring and sending up within the next two or three months a large supply of the best and freshest Bourbon seed which can be had. A further supply of the Patna seed is also necessary. Since I began this report, a letter has come in from Mr. Price on this subject; he asks for 15 maunds of Bourbon and 25 maunds of Patna seed. His estimate, I think, is too low; I should like to have 30 or 40 maunds of the former, if it can be got, my object being to get the ryotts in the vicinity of Foolbareeah, where the soil seems peculiarly favourable, to take up the cultivation to a considerable extent. I have already intimated, that I think it better to reduce the Neej cultivation.

6. It has occurred to me that every purpose that Government or your Board can have in view, would be answered by the submission of quarterly reports from Mr. Price; a report embracing a period of three months would usually have something worthy of note to record; but your Board must have observed, that in giving an account of his proceedings every month, Mr. Price, thinking it absolutely necessary to write something, has been in the habit of entering into details of no real interest.

7. It would be satisfactory, both to me and to Mr. Price, to know what has been thought by the London merchants of the specimens of cotton grown in this district, sent home some time back; should any communication have been received upon the subject from the Honourable Court of Directors, I hope to be favoured with a copy of it.

I have, &c.

(signed)

J. Dunbar,

Commissioner of Revenue.

Commissioner's Office, Dacca Division, Dacca,
29 January 1848.

I.
Bengal and
North Western
Provinces.

MEMORANDUM of the Expenses incurred since the Commencement of the Government Experimental Cotton Cultivation, up to the end of December 1847.

1. YEAR.	2. Mr. Price's Allowance.	3. Neej Cotton Cultivation, including every Charge connected with the Farm as shown in the Monthly Bills.	4. Ryottee Cultivation, including every Charge connected with the Farm as shown in the Monthly Bills.	5. Contingencies.	6. TOTAL.
	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>
1843 - - -	1,498 - -	- - -	- - -	435 4 -	1,933 4 -
1844 - - -	5,220 - -	- - -	- - -	- - -	5,220 - -
1845 - - -	5,400 - -	1,630 2 -	700 - -	- - -	7,730 2 -
1846 - - -	5,400 - -	1,992 12 -	24 - -	- - -	7,416 12 -
1847 - - -	5,400 - -	1,910 13 8	150 - -	- - -	7,460 13 8
TOTAL - -	22,918 - -	5,533 11 8	874 - -	435 4 -	29,760 15 8

REMARKS.—The amount charged under Contingencies is for the expense of a dawk allowed me to reach Dacca, and an allowance of 300 rupees to enable me to find means of travelling when employed examining and reporting on the soils of this and the neighbouring districts.

Dacca Government Farm,
20 January 1848.

(signed) *J. O. Price,*
Govt. Cotton Planter.

Commissioner's Office, Dacca Division, Dacca,
29 January 1848.

(signed) *R. Pereira,*
Officiating Assistant.

No. 3.

(No. 235.)

From *W. Seton Karr, Esq.,* Under Secretary to the Government of Bengal,
to Secretary Sudder Board of Revenue.

Sir,

I AM directed to acknowledge the receipt of your letter, No. 51, dated the 15th ultimo, with its enclosures, relative to the experimental cotton culture under the management of Mr. J. O. Price, and to inform you in reply, that notwithstanding the unsuccessful and unprofitable result hitherto, his Lordship would wish the experiment to be continued for the present, but to be confined to Patna and Bourbon cotton.

From the favourable results hitherto attending the Patna cotton, his Lordship desires that the greater proportion of the future experiments may be made with that description of material.

The original enclosures received with your letter are herewith returned, copies having been kept for record.

Fort William,
29 March 1848.

I have, &c.
(signed) *W. Seton Karr,*
Under Secretary to the Government of Bengal.

No. 4.

(No. 118.)

From the Secretary to the Sudder Board of Revenue to *F. J. Halliday, Esq.,* Secretary to the Government of Bengal, Revenue Department; dated Fort William, 25 April 1848.

Sir,

WITH reference to Under Secretary Mr. Seton Karr's letter of the 29th ultimo, No. 235, I am directed by the Sudder Board of Revenue to request that you will place before the Right Honourable the Governor of Bengal the enclosed letter from the Commissioner of Dacca, dated the 14th instant, No. 63, inquiring whether orders have been issued for supplying him with Bourbon and Patna cotton

Mis Dept.
Present:
*J. Lewis and
E. M. Gordon,
Esqrs.*

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 199

cotton seed, and, if so, when he may expect to receive it; and requesting the Board to bring again to his Lordship's notice his suggestion for the substitution of quarterly for monthly reports of progress.

I have, &c.
(signed) *Geo. Plowden,*
Secretary.

P.S.—Please to return the enclosure.

I.
Bengal and
North Western
Provinces.

(No. 63 of 1848.)

From *J. Dunbar*, Esq., Commissioner of Dacca, to the Sudder Board of Revenue,
Fort William.

No. 5.
Enclosure.

Gentlemen,

I HAVE the honour to acknowledge the receipt of your Board's proceedings, No. 48, dated the 6th instant, with enclosures, relative to the experimental cultivation of cotton in this district.

2. I have to request that your Board will be good enough to inform me whether the necessary instructions have been issued for a further supply of Bourbon and Patna cotton seed, and, if so, when I may expect to receive it.

3. The Right Honourable the Governor not having passed any orders in regard to the substitution of quarterly for monthly reports, perhaps your Board will take an early opportunity of bringing the matter to his Lordship's notice again.

Commissioner's Office, Dacca Division,
Dacca, 14 April 1848.

I am, &c.
(signed) *J. Dunbar,*
Commissioner of Revenue.

(No. 80.)

From *W. Seton Karr*, Esq., Under Secretary to the Government of Bengal, to the Secretary to the Government of Fort St. George.

No. 6.
ings
of

Sir,

I AM directed by the Right Honourable the Governor of Bengal to request that you will, with the permission of the Right Honourable the Governor in Council of Fort St. George, instruct the Superintendent of Cotton Plantations at Coimbatore to send 20 maunds of acclimated Bourbon cotton seed to the address of the Superintendent of Marine at Calcutta by the earliest opportunity.

Fort William,
26 April 1848.

I have, &c.
(signed) *W. Seton Karr,*
Under Secretary to the Government of Bengal.

(No. 314.)

From *W. Seton Karr*, Esq., Under Secretary to the Government of Bengal, to Superintendent of Marine; dated 26 April 1848.

No. 7.

Sir,

I AM directed to forward the accompanying copy of a letter this day addressed to the Madras Government, and to request that you will forward the cotton seed referred to therein immediately on its arrival to Mr. J. O. Price, cotton planter at Dacca.

Fort William,
26 April 1848.

I have, &c.
(signed) *W. Seton Karr,*
Under Secretary to the Government of Bengal.

I.
Bengal and
North Western
Provinces.

No. 8.

(No. 78.)

From *W. Seton Karr*, Esq., Under Secretary to the Government of Bengal,
to Commissioner of Patna.

Sir,

I AM directed to request that you will adopt immediate measures to procure 30 maunds of indigenous cotton seed of the description furnished by your predecessor in July 1846, and dispatch the same to the Commissioner of Dacca, to whom a copy of this letter will be furnished.

Fort William,
26 April 1848.

I have, &c.
(signed) *W. Seton Karr*,
Under Secretary to the Government of Bengal.

(No. 79.)

Copy forwarded to the Commissioner of Dacca for his Information.

No. 9.

(No. 313.)

From *W. Seton Karr*, Esq., Under Secretary to the Government of Bengal, to
Secretary Sudder Board of Revenue.

Sir,

I AM directed by the Right Honourable the Governor of Bengal to acknowledge the receipt of your letter, No. 118, of the 25th instant, with enclosure, and to inform you in reply, that his Lordship accedes to the Commissioner of Dacca's proposition that quarterly instead of monthly reports of Mr. Price's proceedings should be forwarded to Government.

The necessary instructions have been addressed to the Commissioner of Patna to forward 30 maunds of Patna cotton seed, and to the authorities at Madras for 20 maunds of the Bombay kinds, such being, in his Lordship's opinion, the proportion which the two varieties should bear to each other in the next experiments.

The original enclosure of your letter is herewith returned, a copy having been kept for record.

Fort William,
26 April 1848.

I have, &c.
(signed) *W. Seton Karr*,
Under Secretary to the Government of Bengal.

EXTRACT Revenue Letter from Bengal, dated 6 February (No. 6) 1849.

38. ANNEXED will be found a report from Mr. J. O. Price in the experimental cotton cultivation for the first quarter of 1848-49.*

EXTRACT from the Proceedings of the Government of Bengal in the Revenue Department, dated 20 September 1848.

No. 9.

(No. 259.)

From the Secretary to the Sudder Board of Revenue to *F. J. Halliday*, Esq., Secretary to the Government of Bengal, Revenue Department; dated Fort William, 12 September 1848.

Sir,

I AM directed by the Sudder Board of Revenue to request that you will submit, for the consideration of the Right Honourable the Governor of Bengal, the accompanying letter, No. 168, dated the 26th ultimo, and its enclosure, from the Commissioner of Dacca, being Mr. J. O. Price's report on the experimental cultivation of cotton for the first quarter of 1848-49.

Sudder Board of Revenue.

I have, &c.
(signed) *G. W. Plowden*,
Secretary.

Mis Dept.
Present:
J. Lewis and
E. M. Gordon,
Esqrs.

* Quarterly Report on the cotton cultivation at Dacca; R. P. 20 September 1848, Nos. 9 & 10.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 201

(No. 168 of 1848.)

From *J. Dunbar*, Esq., Commissioner of Dacca, to the Sudder Board of Revenue,
Fort William.

Gentlemen,

IN transmitting the accompanying copy of Mr. Price's report, No. 57, dated the 1st instant, of his proceedings in regard to the cultivation of cotton during the first quarter of 1848-49, I have the honour to inform your Board that that gentleman having attended my office on business yesterday, I am happy to learn from him that much of the more advanced plant on the farm is looking remarkably well, notwithstanding that the water lay upon the lands to the depth of a foot or more for some time. It is satisfactory to know that it is hardy enough to survive so severe a trial.

Commissioner's Office, Dacca Division,
Dacca, 26 August 1848.

I have, &c.
(signed) *J. Dunbar*,
Commissioner of Revenue.

I.
Bengal and
North Western
Provinces.

No. 10.

(No. 57 of 1848.)

From *J. O. Price*, Esq., Government Cotton Planter, Dacca, to *J. Dunbar*, Esq.,
Commissioner of Dacca Division.

Sir,

THREE months having now elapsed since my last report, I beg leave to submit to you, for the information of Government, my proceedings from the 1st of May to the 31st of July.

2. Not having been favoured with any rain until the 11th of May, the coolies in the farm continued to be employed until that time in preparing land for seed, but having had fine rains from the above date, they were engaged the remainder of the month in planting Bourbon seed, and also in planting plantain suckers round the farm as a shelter to the young cotton from high winds. The ryots who have taken advances for the small ryottee cultivation we have on hand at present, were also employed nearly as above stated. This para. refers to our proceedings during the month of May.

3. The seed planted last month having vegetated well, and its growth having been very quick, I found it necessary in the early part of this month to weed and mould round it, so as to support it, the heavy rains having washed away the soil from the roots of the young plants; after finishing which the coolies were employed the remaining part of the month in weeding and moulding the November plant, which at that time was very promising, and although it had to contend with a continuation of heavy rains with little or no sunshine, still it retained a fine healthy appearance. The ryottee lands that were planted last month and the early part of this, have vegetated well. I have been anxiously expecting the arrival of the Bourbon and Patna seed. This para. refers to our proceedings for the month of June.

4. This month commenced with the same unfavourable weather that we had during the last, and the leaf of the young plants began to lose the healthy colour it had retained until that time. This we could not expect to have been otherwise, from the saturated state the land was in from the incessant rains we have had; so much so, that cultivation had become a very difficult matter to effect, and on the 13th we were obliged to stop cultivation altogether, not only on account of the state of the lands, but also from the threatening state of the river, which I am sorry to have to add increased every day until the 21st, by which time there was better than a foot of water all over the farm, and remained so, more or less, until the 25th, by which date the inundation had totally sub-sided from the farm lands. In consequence of the young plant having been under water we will lose the greater part of it, and the lands will consequently have to be replanted as soon as the new seed arrives, and the weather will permit of our doing so; but I am happy in being able to state that the more forward plant will still do well, should we have any favourable weather in the ensuing month. The ryottee cultivation will all have to be replanted, having also been destroyed by the inundation. This para. refers to our proceedings for the month of July.

5. During the height of the inundation I visited several parts of the district best suited for the growth of cotton, for the purpose of seeing how the lands there were affected by the rise of the rivers, when I found, as I had anticipated, almost every biggah of land that could be called chur land (wherever I went) under water, which afforded me the satisfaction of knowing that the land on which the Government farm is established is as high, if not higher, than the greater part of the chur land in this district. The present inundation, although an injury to us at present, I hope will ultimately be of much advantage to the farm, and the other lands that we may require for ryottee cultivation, from the benefit that they will derive from the deposit lately left on them. It is also a satisfaction to know that so high an inundation seldom takes place; indeed, I have been respectably informed that there has not been one so high since 1833; but I am at present of opinion, that if an equally high inundation took place every fourth or fifth year, it would be a benefit to us instead of injury, as chur lands generally contain a considerable portion of sand, and if constantly kept in cultivation would require to be assisted, either by an inundation or otherwise; so that what we now look upon as an evil, I trust may prove to be of service. I am in great hopes that the supply of cotton seed may arrive in all this month, so that we may be enabled to make early arrangements for October sowings; as we now see, from

202 PAPERS RELATING TO MEASURES TAKEN SINCE 1847

I.
Bengal and
North Western
Provinces.

experience, that May and June sowings will not do on the char-land, on account of the plant not having sufficient time to attain either size or strength to survive through a long inundation, such as we have lately experienced

I have, &c.
(signed) *J. O. Price,*
Government Cotton Planter.

Dacca Government Farm,
1 August 1848.

Commissioner's Office, Dacca Division,
Dacca, 26 August 1848.

(No. 5, D.)

EXTRACT from a General Letter from the Government of Bengal to the Honourable the Court of Directors, in the Revenue Department (No. 15 of 1849); dated 17 April.

15th, or Dacca
Division.

Application from
Mr. Price for four
churkas.

Report on the
cotton cultivation
at Dacca.

26. LORD DALHOUSIE refused compliance with an application submitted by Mr. Price for four churkas for cleaning cotton, as the state of the plantation was not such as to justify the proposed expense.*

28. Annexed will be found a report from Mr. Price for the quarter ending the 31st October last, on the cotton cultivation at Dacca.†

(No. 5, D.)

EXTRACT from the Proceedings of the Government of Bengal, in the Revenue Department; dated 13 September 1848.

No. 6.

(No. 216.)

From the Secretary to the Sudder Board of Revenue to *F. J. Halliday, Esq.*, Secretary to the Government of Bengal, Revenue Department; dated Fort William, 24 July 1848.

Mts. Dept.
Present:
J. Lewis and
E. M. Gordon,
Esqrs.

Sir,

I AM directed by the Sudder Board of Revenue to request that you will submit for the favourable consideration of the Right Honourable the Governor of Bengal, the accompanying letter, No. 140, dated the 8th instant, and its enclosure, from the Commissioner of Dacca, soliciting that Mr. J. O. Price may be supplied with four churkas for the cleaning of cotton, such as are now being manufactured at the Calcutta Mint, under the superintendence of Mr. Mather.

Sudder Board of Revenue.

I have, &c.
(signed) *G. Plowden,*
Secretary.

No. 7.

(No. 140 of 1848.)

From *J. Dunbar, Esq.*, Commissioner of Dacca, to the Sudder Board of Revenue, Fort William,

Gentlemen,

I HAVE the honour to lay before your Board copy of a communication, No. 51, dated the 1st instant, from Mr. J. O. Price, Government cotton planter, requesting to be supplied with four churkas for cleaning cotton, such as those now being manufactured at the Calcutta Mint, under the supervision of Mr. Mather.

2. As a good description of churka for cleaning cotton is particularly needed in the present experiment conducted in this district, I shall feel obliged by your submitting the application for the favourable consideration and orders of Government.

Commissioner's Office, Dacca Division,
Dacca, 8 July 1848.

I have, &c.
(signed) *J. Dunbar,*
Commissioner of Revenue.

* Revenue Proceedings, 13 September 1848, Nos. 6 to 9.

† Revenue Proceedings, 13 December 1848, No. 10.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 203

I.
Bengal and
North Western
Provinces.

(No. 51 of 1848.)

From Government Cotton Planter, Dacca, to *J. Dunbar*, Esq., Commissioner of Dacca Division.

No. 8.

Sir,

I OBSERVE in a report of the Agricultural and Horticultural Society that a Mr. Mather has been deputed by the Government of the North West Provinces to superintend the manufacture of a number of churkas at the Mint of an improved kind; and as we are sadly in want of something of that kind here, on account of the great expense attending the cleaning of cotton by the small native churka of this district, I beg leave to request that you will use your interest in securing four of them, if possible, for the use of the experiment in this district, or a fewer number if that number is not procurable at present.

I have, &c.
(signed) *J. O. Price*,
Government Cotton Planter.

Dacca Government Farm,
1 July 1848,

(True copy.)

(signed) *R. Pereira*, Assistant.

Commissioner's Office, Dacca Division,
Dacca, 8 July 1848.

(No. 714.)

No. 9.

From the Under Secretary to the Government of Bengal to Secretary Sudder Board of Revenue; dated Fort William, 12 September 1848.

Sir,

I AM directed to acknowledge the receipt of your letter, No. 216, dated the 24th July last, submitting an application from Mr. *J. O. Price*, for four churkas for cleaning cotton, and to inform you that his Lordship is of opinion that the state of the plantation is not such as to justify the proposed expense.

Revenue.

The original enclosure herewith returned, copies having been kept for record.

I have, &c.
(signed) *W. Seton Karr*,
Under Secretary to the Government of Bengal.

EXTRACT from the Proceedings of the Government of Bengal, in the Revenue Department; dated 13 December 1848.

(No. 223 of 1848.)

No. 10.

From *J. Dunbar*, Esq., Commissioner of Revenue, 15th Division, Dacca, to the Sudder Board of Revenue, Fort William.

Gentlemen,

I HAVE the honour to transmit a copy of Mr. Price's report, No. 76, dated the 18th instant, of his proceedings in regard to the cultivation of cotton during the second quarter of 1848-49, which does not seem to require any remarks.

I have, &c.
(signed) *J. Dunbar*,
Commissioner of Revenue.

Commissioner's Office, Dacca Division,
Dacca, 21 November 1848.

(No. 76 of 1848.)

From *J. O. Price*, Esq., Government Cotton Planter, to *J. Dunbar*, Esq., Commissioner of Dacca Division.

Sir,

I HAVE the honour to submit for the information of Government the quarterly report of my proceedings, from the 1st of August to the 31st of October.

2. During all the month of August the inundation continued so very high, that scarcely any cultivation could be effected, either in neej cultivation or otherwise.

3. The inundation having receded very considerably in the early part of September, the coolies were consequently employed in cleaning and moulding the cotton field, making drains, and carrying seetee from Suttoollah factory for the use of the farm; but the inundation again increased to so great a height, that by the 15th we were again obliged to stop cultivation

I.
Bengal and
North Western
Provinces.

cultivation of every kind, for the greater part of the remainder of the month. During the whole of this month, I was busily engaged in visiting the different localities that I thought best suited for the cultivation of cotton, and in making advances to the ryots for the cultivation of the same.

4. The coolies on the farm have been busily engaged from the 1st of October, in preparing land and planting cotton seed of different kinds, a great part of which has already vegetated well, and is looking very healthy. I have been anxiously occupied all this month, not only in making advances, but also in superintending the ryottee cultivation, the greater part of which is in a very forward state at present; and as I have not made advances on any but choice lands (which, including the farm, will amount to better than 500 biggahs), I trust, therefore, that we may be able to realise the wish of Government.

5. I embrace this opportunity of mentioning how very much I was disappointed at hearing of the very low prices at which the samples of cottons sent home were valued in London, but particularly so, that of the American and Bourbon; as a gentleman in Dacca sent to Liverpool three small samples which I supplied him with, from the same cotton, all of which were valued as follows: Bourbon 6*d.*, American 5½*d.* Ditto native 5*d.* ditto. I am at a loss to account for so great a difference in the two valuations of the same article, unless that which was valued in London had got damaged in some way.

I have, &c.
(signed) *J. O. Price,*
Government Cotton Planter.

Dacca Government Farm,
18 November 1848.

(True copy.)

(signed) *R. Pereira,* Assistant.

Commissioner's Office, Dacca Division,
Dacca, 21 November 1848.

(No. 355.)

SUBMITTED for the information of the Honourable the Deputy-Governor of Bengal, by direction of the Sudder Board of Revenue.

(signed) *G. Plowden,* Secretary.

Fort William, 28 November 1848.

EXTRACT from a General Letter from the Government of Bengal to the Honourable the Court of Directors in the Revenue Department (No. 19 of 1849), dated 9th July.

Quarterly report
on the cotton cul-
tivation at Dacca.

33. ANNEXED will be found Mr. Price's report on the experimental cotton cultivation for the third quarter of 1848-49. The report is, on the whole, of a favourable character.*

EXTRACT from the Proceedings of the Government of Bengal in the Revenue Department, under date 8 March 1849.

No. 40.

(No. 22 of 1849.)

From *J. Dunbar,* Esq., Commissioner of Revenue for the Division of Dacca, to the Sudder Board of Revenue, Fort William.

Gentlemen,

I HAVE the honour to transmit a copy of Mr. Price's report, No. 8, dated the 1st instant, of his proceedings in regard to the cultivation of cotton during the third quarter of 1848-49, and to state that, when that gentleman waited upon me a few days ago, he gave me to understand that the cotton prospects had never, since the commencement of the experimental cultivation, been so favourable as they are now.

I have, &c.
(signed) *J. Dunbar,*
Commissioner of Revenue.

Commissioner's Office, Dacca Division,
Dacca, 12 February 1849.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 205

(No. 8 of 1849.)

From *J. O. Price*, Esq., Government Cotton Planter, to *J. Dunbar*, Esq., Commissioner of Dacca Division.

I.
Bengal and
North Western
Provinces.

Sir,

I HAVE the honour to submit to you, for the information of Government, the quarterly report of my proceedings from the 1st of November to the 31st of January.

2. Early in the month of November I finished planting on the farm the following kinds of cotton seed, Bourbon, American, Patna, fine Dacca, and a small quantity of the Tipperah Hill cotton, and commenced giving light mould to the first planted part of it, which is at present looking very healthy. I also, in the early part of the month, finished making advances for the ryottee cultivation, which the number of holidays and sickness among the natives had prevented my being able to make in the preceding month. The remainder of the month I continued engaged in visiting the several places at which we have cultivation, without which, and even with that, it is difficult to get the ryots to cultivate cotton land as they should do. This want of attention in the natives to cultivation appears to arise from the common crops of this country requiring so little attention after the seed is planted.

3. The weather during the greater part of December having continued very mild, was very beneficial to the young plants, having increased their growth so much as to give at least the early planted part of it sufficient strength to contend with the cold nights of the then coming month. During this month I again visited the whole of the ryottee cultivation, and also employed my assistant in the same way, as the cultivation is very much scattered over the district; the early planted fields I found looking particularly well, and also that which was planted later looking healthy, with exception of that at Gundrubpore Chur, at which place the Patna seed did not vegetate well, and will require to be partially replanted as soon as the nights become warmer, during this month. The first planted field on the farm, which stood the inundation so well, yielded about 10 maunds of cotton, but not more than one-fourth of the bolls opened, occasioned, I suppose, by the coldness of the nights; the leaf and bolls are now falling off, and new foliage coming on the trees.

4. The month of January has been much colder, and particularly the nights, than that of the preceding month, which has checked the growth of the young plants at all the places I have visited this month, and in some degree changed the healthy appearance it previously had; but this, of course, will soon disappear when the nights become warmer. The fine rain we had on the 19th was much wanted, and has been of much benefit to the cultivation generally.

5. I have planted adjacent to the bungalow on the farm a few small beds of the different kinds of cotton seed we have, for the purpose of again trying the crossing system, in hopes it may succeed better than that which I tried at Toke on the red soil, at which place the seed obtained from the flowers that had been crossed vegetated; but the seed obtained again from that plant I found, on examination, was perfectly hollow, without any germinating quality whatever, although the outward appearance of the seed was quite perfect.

Dacca Government Farm,
1 February 1849.

I have, &c.
(signed) *J. O. Price*,
Government Cotton Planter.

(True copy.)
(signed) *R. Pereira*, Assistant.

Commissioner's Office, Dacca Division,
Dacca, 12 February 1849.

(No. 59.)

SUBMITTED for the information of the Honourable the Deputy Governor of Bengal.

By direction of the Sudder Board of Revenue,

Fort William,
27 February 1849.

(signed) *G. Plowden*,
Secretary.

EXTRACT from a General Letter from the Government of Bengal to the Honourable the Court of Directors in the Revenue Department (No. 28 of 1849), dated 8 October.

45. ANNEXED will be found Mr. Price's report on the experimental cotton cultivation at Dacca, for the fourth quarter of 1848-49. Mr. Price reports favourably of the state of the farm at Toke, but mentions that the ryottee cultivation had suffered much from hailstorms during the month of March.*

Report on the
cotton cultivation
at Dacca.

* Revenue Proceedings, 6 June 1849, No. 8.

I.
Bengal and
North Western
Provinces.

No. 8.

EXTRACT from the Proceedings of the Government of Bengal, in the Revenue Department,
under date 6 June 1849.

(No. 116 of 1849.)

From C. Tottenham, Esq., in charge of the Office of Commissioner of Revenue, Dacca, to
the Sudder Board of Revenue, Fort William.

Gentlemen,

I HAVE the honour to transmit a copy of Mr. Price's report, dated the 1st instant, No. 25,
of his proceedings in regard to the cultivation of cotton in the fourth quarter of 1848-49,
which does not seem to require any remarks.

I have, &c.
(signed) C. Tottenham,

In charge of the Office of Commissioner of Revenue.

Commissioner's Office, Dacca Division,
Dacca, 18 May 1849.

(No. 25.)

From J. O. Price, Esq., Government Cotton Planter, Dacca, to C. Tottenham, Esq.,
in charge of the Office of Commissioner of Revenue, Dacca.

Sir,

I HAVE the honour to submit to you, for the information of Government, the quarterly
report of my proceedings from the 1st February to 30th April.

2. During the month of February I visited, as usual, the several places at which we
have got ryottee cultivation, but the nights having continued very cold during the greater
part of the month, and consequently very little change having taken place in the appearance
of the cultivation, I have nothing particular to remark respecting it.

3. Early in the month of March I again proceeded to examine the ryottee cultivation,
and found, that with exception of one or two places, the young plants had benefitted much
by frequent showers of rain we had had, although the rains have been generally accom-
panied with very high winds and frequently hail, which prevented them from being as
beneficial as they otherwise would have been. I have much pleasure in stating that the
present appearance of the farm is very promising.

4. In the early part of this month I was busily engaged on the farm, but having had
an unusually severe hailstorm on the 9th instant, I again left the farm to visit the ryottee
cultivation, to see to what extent it had suffered, and on arriving at Sonargunge, and also at
Kandee, I was sorry to find that scarcely a plant had escaped injury from the hail; but with
care and a little additional cultivation, I am in hopes much of it will recover. Fortunately all
the rest of the cultivation, which is by much the greater part of it, escaped with the loss of a
few of its leaves only. This was much the most severe hailstorm I have seen since I have
been in India; we have therefore a right to be thankful that we have suffered so little
from it.

I have, &c.
(signed) J. O. Price,
Government Cotton Planter

Dacca Government Farm,
1 May 1849.

(True copy.)

(signed) R. Pereira, Assistant.

Commissioner's Office, Dacca Division,
Dacca, 18 May 1849.

(No. 144.)

SUBMITTED for the information of the Honourable the Deputy Governor of
Bengal.

By order of the Sudder Board of Revenue,

Fort William, 29 May 1849.

(signed) G. Plowden,
Secretary.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 207

(No. 5.)

EXTRACT from a General Letter from the Government of Bengal to the Honourable the Court of Directors in the Revenue Department, under date 2 November 1850, No. 24.

I.
Bengal and
North Western
Provinces.

15th or Dacca
Division.

The abandonment
of the experi-
mental cotton cul-
tivation at Dacca,
and the deputation
of Mr. Price to
Assam.

132. HEREWITH are submitted reports from Mr. Price regarding the cotton cultivation at Dacca, for the 1st, 2d, and 3d quarters of 1849-50.*

133. Your Honourable Court will perceive that, with the approval of the Government of India, this experiment, which has proved a complete failure, has been abandoned; in seven years the cotton farming establishment having cost Rs. 41,106. 4. 6., while the return from the cotton had not amounted to more than 580 rupees.

134. I concurred with the Sudder Board in opinion as to the inexpediency of commencing a new experiment either in the Tenasserim provinces, or in the islands to the north of the Megna, as proposed by Mr. Price.

135. Subsequently to the issue of the above orders, a correspondence was received from the Sudder Board, from which it appeared that the Commissioner, Major Jenkins, was favourable to the introduction of this experiment into Assam; I accordingly authorised Mr. Price to be deputed to Assam, drawing the salary of his appointment, and in communication with the Commissioner to make the necessary preliminary inquiries on the subject; but the Board were informed that I would await a further report before deciding upon any future operations being carried on by Mr. Price.

EXTRACT from the Proceedings of the Government of Bengal, in the Revenue Department; dated 19 September 1849.

(No. 263.)

From the Secretary to the Sudder Board of Revenue to *J. P. Grant*, Esq., Secretary to the Government of Bengal, Revenue Department; dated Fort William, 31st August 1849.

No. 20.

Sir,

I AM directed by the Sudder Board of Revenue to submit herewith a copy of Mr. Price's report on the experimental cotton cultivation in the Dacca division, for the first quarter of 1849-50.

Mis. Dept.
Present :
E. M. Gordon
and H. Ricketts,
Esqrs.

2. Nearly a year and a half having elapsed since the continuance of the experiment was sanctioned by the Governor of Bengal (as communicated in Under Secretary Mr. Seton Karr's letter of the 29th March 1848, No. 235), the Board would suggest that it is time to call upon the Commissioner for a report as to whether it is advisable to carry on the experiment any longer.

I have, &c.
(signed) *G. Plowden*, Secretary.

(No. 38 of 1849.)

From *J. O. Price*, Esq., Government Cotton Planter, Dacca, to *R. H. Mytton*, Esq., Officiating Commissioner of Dacca Division.

No. 21.

Sir,

I HAVE the honour to submit to you, for the information of Government, the quarterly report of my proceedings, from the 1st of May to the 31st July.

On the 1st of May I proceeded to Atkandee, at which place I remained for three days, making the ryots carefully cultivate the lands on which the cotton plant had suffered severely from the late hail-storm, which I mentioned in my last report had been particularly destructive in that neighbourhood. My next visit was to Sopargunge, at which place I was pleased to find that much of the young plant had in a great measure recovered from the effects

* Revenue Proceedings, 19 September 1849, Nos. 20 to 22; 6 February 1850, Nos. 18 to 21; 27 March 1850, No. 30; 1 May 1850, Nos. 19 and 20; 3 July 1850, Nos. 37 and 38.

I.
Bengal and
North Western
Provinces.

effects of the hail-storm above mentioned. I next went to Dhamghur, in which neighbourhood the ryots almost all planted Bourbon seed, their crop from which is more promising than any other part of the ryottee cultivation. From thence I returned to the farm and after giving necessary directions there, I proceeded up the Boreegunga, and examined the cotton lands at Deyapore, which, from the extreme lightness of the land and neglect of cultivation, is in a very hopeless state. The cultivation at Phoolbarriah is short for its age, but healthy in colour of leaf, and having all the rainy season to grow, I am in hopes will obtain sufficient size before the dry season sets in, by which time it should be in full blossom. The growth of all kinds of cotton on the farm has been very rapid this month, and its appearance most healthy.

We have had a great deal of rain this month, accompanied frequently with very high winds.

During the month of June I was prevented from visiting the ryottee cultivation by a most severe attack of rheumatism, which quite crippled me for the greater part of the month, during which time I sent my sirkar to visit and examine the progress of the ryottee cultivation, who reports favourably of it. We have had a great deal of rain this month, but less boisterous than last month was.

In the early part of July I visited Phoolbarriah, to which place I had sent a sirdar from the farm to see the cotton land properly cleaned, and the plant sufficiently moulded, from which I am in hopes it may derive much benefit in quickening its growth. From this place I went to Manickgunge, at which place we had fortunately only a small cultivation, as the greater part of the land on which it was has been carried away by the river; that that is left is planted with Patna seed, and looking remarkably well. From thence I returned to the farm, and remained until the 21st, by which time the inundation was so unusually high that nearly all the farm had more or less water on it; and on visiting Phoolbarriah, which I did on the 23d, I found the cotton there in the same state. We have been most unfortunate in having such unusually high inundations for two years in succession, although I am in hopes that the cotton, from having attained sufficient size, being nearly all October and November plant, will not suffer much from it; at least, if we may judge from a field that we had on the farm of the same age last year. The river is now falling fast; and, trusting it may continue to do so,

Dacca Government Farm,
1 August 1849.

I have, &c.
(signed) J. O. Price,
Government Cotton Planter.

(A true copy.)
(signed)

G. Plowden, Secretary.

Sudder Board of Revenue,
Fort William, 31 August 1849.

No. 22.

(No. 780.)

From *W. Seton Karr*, Esq., Under Secretary to the Government of Bengal, to
G. Plowden, Esq., Secretary, Sudder Board of Revenue.

Sir,

Revenue.

I AM directed to acknowledge the receipt of your letter, No. 263, dated the 31st ultimo, submitting Mr. Price's report on the experimental cotton cultivation at Dacca, for the first quarter of 1849-50, and to request that the Board will, as suggested, call upon the Commissioner to report whether it is advisable to continue the experiments in question any longer.

I have, &c.

(signed) *W. Seton Karr*,

Under Secretary to the Govt. of Bengal.

Fort William, 19 September 1849.

EXTRACT from the Proceedings of the Government of Bengal, in the Revenue Department, under date 6 February 1850.

No. 18.

(No. 447.)

From the Secretary to the Sudder Board of Revenue to *J. P. Grant*, Esq., Secretary to the Government of Bengal, Revenue Department; dated Fort William, 18 December 1849.

Sir,

IN reply to Under Secretary Mr. Seton Karr's letter, dated the 19th September last, No. 780, I am directed by the Sudder Board of Revenue to submit herewith a copy of a letter from the Officiating Commissioner of Dacca, dated

Mis. Dept.
Present
E. M. Gordon
and H. Ricketts,
Esqrs.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 209

the 1st instant, No. 296, with its enclosures, relative to the cotton cultivation in Dacca, together with a copy of Mr. Price's report of his proceedings for the quarter ending the 31st October last.

I.
Bengal and
North Western
Provinces.

2d. In his report, Mr. Price proposes, in the event of the Dacca experimental farm being abandoned, to commence a new experiment, either in the Tenasserim provinces or in the islands of Bulloah, at the mouth of the Megna; but the Board are unable to support his proposition. In Tenasserim, they observe, there are no ryots, and labour is scarce; so that, even if the experiment were to succeed, it would be found impracticable to extend the cultivation. The islands at the mouth of the Megna are too low, and the lands too much saturated with salt, to be fit for growing cotton.

3d. The Board therefore concur in opinion with the Commissioner, that the experiment should be abandoned on the 1st May next, if the return from the crops on the ground be not sufficient to cover the outlay.

Sudder Board of Revenue. I have, &c.
(signed) G. Plowden, Secretary.

(No. 296 of 1849.)

From R. H. Mytton, Esq., Officiating Commissioner of Dacca, to the Sudder Board of Revenue, Fort William.

Gentlemen,

I HAVE the honour to acknowledge receipt of your Secretary's letter, No. 231, dated 16th ultimo.

2d. The annexed account current, embracing a period of seven years, shows an expenditure on the cotton farm of Rs. 41,106. 4. 8., with a return of 4,640 lbs. of cotton, which, at the bazar rate of 2 annas per lb., amount to 580 rupees.

3d. There is nothing in this result to encourage a continuance of the experiment, but the annexed copy of a letter* from Mr. Price gives hopes of some return by the 1st of May.

4th I would propose to inform him, that if the return be not sufficient to cover the annual expense, the establishment will be abolished, and the concern wound up on that date.

* No. 65, dated
6 November 1849.

I have, &c.
(signed) R. H. Mytton,
Officiating Commissioner of Revenue.

Commissioner's Office, Dacca Division,
Dacca, 1 December 1849.

(No. 65 of 1849.)

From J. O. Price, Esq., Government Cotton Planter, to R. H. Mytton, Esq.,
Officiating Commissioner of Dacca Division.

Sir,

HAVING been requested by Mr. Pereira to state, for your information, when the result of the present experiment will be known, and also to express my opinion respecting the likelihood of success in the present crop, in reply to which, I have the honour of informing you that nothing could be more promising than the farm is at present. We have been picking cotton lightly last month, and the trees are now covered with young bolls; so that I hope by the 1st of May, which will embrace nearly all the dry weather (only during which time cotton can be properly picked), that I may be able to report favourably of the returns of the farm, and also of that part of the ryottee cultivation that escaped the inundation, on which the ryots have commenced picking. And I have given them notice that they must, previous to the 1st of May, pay for their advances in cotton, or be prepared to return their advances; so that, in case of the out-turn in cotton not meeting our present expectations, there should be no obstacle in the way of terminating the experiment in this district, to do which sooner would not be doing justice to the ryots that have taken advances, by not allowing them the dry season to pick their crop; besides which, the nee expense of the cultivation for the last year would be thrown away.

I have, &c.
(signed) J. O. Price,
Government Cotton Planter.

Dacca Government Farm,
6 November 1849.

I.
Bengal and
North Western
Provinces.

MEMORANDUM of the Expenses incurred since the commencement of the Government Experimental Cotton Cultivation, up to 1 May 1847.

Y E A R.	Mr. Price's Allowance.	Neej Cotton Cultivation, including every Charge connected with the Farm, as shown in the Monthly Bill.	Ryottee Cultivation, including every Charge connected with the Farm, as shown in the Monthly Bill.	Contingencies.	TOTAL.
	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>
1843 - - -	1,498 - -	- - - -	- - - -	435 4 -	1,933 4 -
1844 - - -	5,220 - -	- - - -	- - - -	- - - -	5,220 - -
1845 - - -	5,400 - -	1,630 2 -	700 - -	- - - -	7,730 2 -
1846 - - -	5,400 - -	1,992 12 -	24 - -	- - - -	7,416 12 -
1847 - - -	1,800 - -	550 - -	100 - -	- - - -	2,450 - -
TOTAL - - - <i>Rs.</i>	19,318 - -	4,172 14 -	824 - -	435 4 -	24,750 2 -

REMARKS.—The amount charged under contingencies is for the expense of a dawk allowed me to reach Dacca, and an allowance of 300 rupees to enable me to find means of travelling when employed examining and reporting on the soils, &c., of this and the neighbouring districts, in which capacity I was employed until May 1845.

Dacca Government Farm,
27 March 1848.

(signed) *J. O. Price,*
Govt. Cotton Planter.

STATEMENT of Sundry Packages of Cotton sent home from the Dacca Government Experimental Cotton Farm, on 21 October 1846.

No.	Lbs.	Marks.	R E M A R K S.
1	45	R.	Grown at Runypore from Mexican seed.
2	39	R.	Ditto - - ditto - - ditto.
3	63	F.	Ditto Dacca Government farm from American seed.
4	45	F.	Ditto - - - - ditto - - - - ditto.
5	48	F.	Ditto - - - - ditto - - - - ditto.
6	43	A.	Ditto Assam from native seed.
7	46	T.	Ditto Tipperah - ditto.
8	16	T.	Ditto - ditto - ditto
9	17	D.	Ditto Dacca from fine native seed.
10	16	B.	Ditto Phoolbarreah from Bourbon native seed.

Dacca Government Farm,
27 March 1848.

(signed) *J. O. Price,*
Govt. Cotton Planter.

MEMORANDUM of the Expenses incurred by the Government Experimental Cotton Cultivation, from 1 May 1847 up to 1 May 1848.

Y E A R.	Mr. Price's Allowance.	Neej Cotton Cultivation, including every Charge connected with the Farm, as shown in the Monthly Bill.	Ryottee Cultivation, including every Charge connected with the Farm, as shown in the Monthly Bill.	Contingencies.	TOTAL.
	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>
1848 - - -	5,400 - -	1,794 2 8	800 - -	- - - -	7,994 2 8

REMARKS.—The amount charged under neej expenditure, includes the expenses incurred in removing the bungalow, godown, and coohes' huts from Toke Farm (lately abandoned) to Bucktoholee Chur, and erecting the same at that place. The amount charged for ryottee expenditure is for advances lately made for chur land to be planted this month.

Dacca Government Farm,
19 May 1848.

(signed) *J. O. Price,*
Govt. Cotton Planter.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 211

I.
Bengal and
North Western
Provinces.

MEMORANDUM of Sums realised by the Government Experimental Cotton Cultivation,
from 1 May 1847 to 1 May 1848.

DATE.	Sums realised.	Cotton Shipped.	Unginned Cotton in hand.	Ginned Cotton in hand.	REMARKS.
	<i>Rs. a. p.</i>	<i>Bales.</i>	<i>Lbs.</i>	<i>Lbs.</i>	
1 May - - -	- - -	- - -	3,840	- - -	About three-fourths of the cotton on hand was grown from American seed, and the remainder from native seed.

Dacca Government Farm,
19 May 1848.

(signed) *J. O. Price,*
Govt. Cotton Planter.

MEMORANDUM of the Expenses incurred by the Government Experimental Cotton Cultivation,
from 1 May 1848 to 1 May 1849.

YEAR.	Mr. Price's Allowances.	Neerj Cotton Cultivation, including every Charge connected with the Farm, as shown in the Monthly Bill.	Ryottee Cultivation, including every Charge connected with the Farm, as shown in the Monthly Bill.	Contingencies.	TOTAL.
	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>
1849 - - -	5,400 - -	1,362 - -	1,600 - -	- - -	8,362 - -

REMARKS.—We have at present a large cultivation on hand of both neerj and ryottee, the greater part of which is very promising.

Dacca Government Farm,
17 May 1849.

(signed) *J. O. Price,*
Govt. Cotton Planter.

MEMORANDUM of Sums realised by the Government Experimental Cotton Cultivation,
from 1 May 1848 to 1 May 1849.

DATE.	Sums realised.	Cotton Shipped.	Unginned Cotton remaining on hand from last Year's Account.	Unginned Cotton remaining on hand of the present Year.	TOTAL.
	<i>Rs. a. p.</i>	<i>Bales.</i>	<i>Lbs.</i>	<i>Lbs.</i>	<i>Lbs.</i>
1 May - - -	- - -	- - -	3,840	800	4,640

REMARKS.—The unusually high inundations we had in the months of July and August last in this district, destroyed the whole of our cotton fields, both neerj and ryottee, with exception of one small field of Bourbon on the farm; thus I hope will account for the deficiency of produce in this year's account.

Dacca Government Farm,
17 May 1849.

(signed) *J. O. Price,*
Govt. Cotton Planter.

(No. 67 of 1849.)

From *J. O. Price, Esq.,* Government Cotton Planter, Dacca, to *R. H. Mylton, Esq.,*
Officiating Commissioner of Dacca Division.

Sir,

I HAVE the honour to submit to you, for the information of Government, the quarterly report of my proceedings, from the 1st of July to the 31st of October; also, most respectfully to offer my opinion with respect to the likelihood of the present experiment in this district ever realising the view of Government.

2. During the month of August very little could be done in the shape of cultivation, on account of the very high inundation we had, accompanied with almost incessant rain for the greater part of the month.

3. Early in the month of September the water had receded so far as to enable us to commence cultivation on the highest parts of our lands, from which time until the present date I have been busily engaged in visiting the ryottee and neerj cultivation alternately, and in seeing that each had proper cultivation; so as to be perfectly satisfied in my own mind

296—Sess. 2.

D D 2

(previous

I.
Bengal and
North Western
Provinces.

(previous to my submitting this report) with respect to our future hopes of bringing the experiment to a successful termination; and, if not so, of recommending to Government the utility of removing the experiment to some other district to the southward better suited for the cultivation of exotic cotton than this part of India is, and to allow the experiment in this district to terminate with the present official year, which would allow the ryots that have succeeded with their crop sufficient time to pick their cotton and make it over in payment of advances; also time to enable those who had not succeeded to return at least a fair proportion of their advances, agreeable to instructions received in a letter, No. 50, of the 17th April 1849, from J. Dunbar, Esq., Commissioner, previous to his removal to the Sudder Board, which arrangement would also allow time to pick the crop from the neej cultivation, which it gives me much pleasure in stating is, as far as present appearance goes, very promising. But I regret to state, and that from sad experience, by which I have been often deceived in this experiment, that little or no confidence can be placed in the appearance of the plant of exotic cotton in this district; this fatality in the plant appears to arise from a want of strength or stamina in the plant to bring its bolls to perfection, which appears to be occasioned from a constant rotation of releafing, flowering, and bolting which the plant undergoes, which nothing but the very richest land could give support to and bring to perfection, and that not perhaps many years in succession. This evil I have tried to correct in several ways, such as depriving it of a portion of its flowers, also pruning, but to no purpose; which fully convinces me that nothing but the very richest and finest lands are suited for the cultivation of exotic cotton in this country, and particularly so when we take into consideration that the lands planted with exotic seed must remain under crop for four or five years in succession. Not so in America, where the plant is an annual, and where the land has the advantage of resting for three or four months in the year, besides the advantage it derives from about two months of severe frost annually. Another very convincing proof of very rich land being required for the cultivation of exotic cotton is that of its succeeding so well in all gardens where it has been tried, the lands of which are (as a natural consequence) not only rich, but highly cultivated. Being therefore fully convinced of the improbability of our succeeding with the experiment, unless favoured by Government with a removal to some other district containing lands of a richer nature than the light sandy alluvial soil of this district, and consequently better suited for the purpose of cotton cultivation than this is, which belief encourages me in taking the liberty of recommending to the notice of Government the district of Mergin, in Tenasserim, the lands of which, from all the information I can find, are extremely rich, besides the advantage of having the dry and wet season less distinctly marked than any other part of that province; which leads me also to hope that the light American ploughs we have might be brought into successful operation, as the frequent showers that that district is favoured with during the north-east monsoon, and the less frequent rains during the wet season, would be both favourable for that purpose, the effecting of which would be a greater matter in cotton cultivation, as hand labour is not only very expensive but also very tedious. But should Government not feel disposed to remove the experiment to so great a distance, I would beg leave to bring next to their notice the fine islands in the mouth of the Ganges, where the lands are reported to be very rich, with the advantage of sea air, which is well known to be very beneficial to cotton cultivation.

Dacca. Government Farm,
20 November 1849.

I have, &c.
(signed) J. O. Price,
Government Cotton Planter.

(True copies.)
(signed) G. Plowden, Secretary.

Sudder Board of Revenue, Fort William,
18 December 1849.

No. 19.

(No. 37.)
From W. Seton Karr, Esq., Under Secretary to the Government of Bengal,
to G. Plowden, Esq., Secretary to the Sudder Board of Revenue.

Revenue.

Sir,
IN reply to your letter, No. 447, of the 18th ultimo, I am directed to inform you, that under the unfavourable circumstances mentioned in the Commissioner's letter, the Honourable the Deputy Governor approves of the suggestion of the Board for abolishing the Dacca experimental cotton cultivation on the 1st of May next, should the return from the crops on the ground be not sufficient to cover the outlay already incurred on this matter.

2. His Honor concurs with the Board in opinion, as to the inexpediency of commencing a new experiment of this kind, either in the Tenasserim provinces or in the islands at the mouth of the Megna.

Fort William,
11 January 1850.

I have, &c.
(signed) W. Seton Karr,
Under-Secretary to the Government
of Bengal.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 213

(No. 38.)

From *W. Seton Karr*, Esq., Under Secretary to the Government of Bengal, to
W. Grey, Esq., Under Secretary to the Government of India, in the Home
Department.

Sir,

IN continuation of the letter, No. 631, from this office, of the 16th August 1847, I am directed by the Honourable the Deputy Governor to state, for the information of the Government of India, that from the accompanying copy of a report received from the Sudder Board of Revenue, the experimental cotton cultivation established in the district of Dacca, under the superintendence of Mr. Price, has proved a complete failure, and in consequence, it is proposed to abandon the cultivation.

2. His Honor observes, that in seven years, the cotton farming establishment has cost the Government Rs. 41,106. 4. 8., while the return from the cotton has not amounted to more than 580 rupees.

3. Under these circumstances, his Honor has intimated to the Sudder Board of Revenue his concurrence in their opinion, that the experiment should be abandoned on the 1st of May next, should the return from the crops on the ground be not sufficient to cover the outlay incurred.

4. The project having emanated from the Government of India, the Deputy Governor has thought it right to intimate to the President in Council his intention, as above expressed, previous to the actual winding-up of the concern.

5. His Honor agrees with the Sudder Board as to the inexpediency of commencing any new experiment of this kind in Tenasserim, or at the mouth of the Megna.

I have, &c.
(signed) *W. Seton Karr*,
Under Secretary to the Government
of Bengal.

Fort William,
11 January 1850.

I.
Bengal and
North Western
Provinces.

No. 20.

Revenue.

(No. 62.)

From *W. Grey*, Esq., Officiating Secretary to the Government of India, to
W. Seton Karr, Esq., Under Secretary to the Government of Bengal.

Sir,

I AM directed to acknowledge the receipt of your letter, No. 38, dated the 11th instant, with enclosure, and in reply to state, that under the circumstances therein represented, the President in Council approves of the authority granted by the Honourable the Deputy Governor of Bengal to the Sudder Board of Revenue, to abandon the experimental cotton cultivation established in the district of Dacca, under the superintendence of Mr. Price, from the 1st of May next, should the return be found insufficient to cover the annual expense.

I have, &c.
(signed) *W. Grey*,
Officiating Secretary to the Government
of India.

Council Chamber,
25 January 1850.

No. 21.

Home Depart-
ment, Revenue.

EXTRACT from the Proceedings of the Government of Bengal in the Revenue Department, dated 27 March 1850.

(No. 128.)

From the Secretary to the Sudder Board of Revenue to *J. P. Grant*, Esq.,
Secretary to the Government of Bengal, Revenue Department, dated Fort
William, 15 March 1850.

Sir,

I AM directed by the Sudder Board of Revenue to submit for the information of the Honourable the Deputy Governor, a copy of Mr. Price's report, dated the 16th ultimo, on the cultivation of cotton in the Dacca district, for the third quarter of 1849-50.

I have, &c.
(signed) *G. Plowden*,
Secretary.

Miscellaneous
Department.
Present:
E. M. Gordon and
H. Ricketts, Esqs.

I.
Bengal and
North Western
Provinces,

(No. 10 of 1850.)

From *J. O. Price*, Esq., Government Cotton Planter, to *R. H. Mytton*, Esq.,
Officiating Commissioner of Dacca.

Sir,

I HAVE the honour to submit to you, for the information of Government, the quarterly report of my proceedings from the 1st of November to the 31st of January.

2. During the month of November the cultivation, both neej and ryottee, continued to recover from the effects of the inundation and to yield cotton lightly; but towards the latter end of the month the cold nights changed the colour of its leaf, and prevented the young bolls from coming to perfection.

3. The month of December was unusually cold, and particularly the nights, which, as usual not only checked the growth of the plants, but also prevented the bolls from opening.

4. January having continued very cold, there is no change in the appearance of the plant or otherwise, but we are anxiously looking forward to the change in the weather that usually takes place in the ensuing month, which soon brings a healthy appearance on the plants. The cultivation is suffering much from the want of rain, of which we have not had a shower for more than three months.

Dacca Government Farm,
16 February 1850.

I have, &c.
(signed) *J. O. Price*,
Government Cotton Planter.

(True copy.)
(signed) G. Plowden, Secretary.

Sudder Board of Revenue, Fort William,
15 March 1850.

EXTRACT from the Proceedings of the Government of Bengal in the Revenue Department, under date 1 May 1850.

(No. 182.)

No. 19.

From the Secretary to the Sudder Board of Revenue to *J. P. Grant*, Esq., Secretary to the Government of Bengal, Revenue Department; dated Fort William, 16 April 1850.

Miscellaneous
Department.

Present:
E. M. Gordon and
H. Ricketts, Esqs.

Sir,

WITH reference to the correspondence noted on the margin,* I am directed by the Sudder Board of Revenue to submit herewith a copy of a letter from the Officiating Commissioner of Dacca, dated the 27th ultimo, No. 99, with its enclosed communication from Mr. *J. O. Price*, Government cotton planter at Dacca, suggesting that a trial in growing cotton be made in the Province of Assam.

2. The experiment at Dacca having failed, the farm will be abandoned without delay, and accounts adjusted. So large a sum has been expended in fruitless experiments in so many places, the Board consider that further outlay on this account would be unadvisable. Even should the climate and soil of Assam be favourable to cotton, labourers amongst so scanty a population would, they fear, be scarcely procurable.

3. With reference, however, to the strong desire evinced by the Home Government to extend the growth of cotton in this country, the Board have deemed it expedient to consult Major Jenkins as to the feasibility of the proposition. Should that officer be able to hold out any hope of success, a further report will be submitted.

I have, &c.
(signed) *G. Plowden*,
Secretary.

* Board to Government, dated 31st August 1849, No. 263. Under Secretary to Government to Board, dated 19th September, No. 780. Board to Government, dated 18th December, No. 447. Under Secretary to Government to Board, dated 11th January 1850, No. 37.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 215

I.
Bengal and
North Western
Provinces.

(No. 99 of 1850.)

From *R. H. Mytton, Esq.*, Official Commissioner of Dacca, to the Sudder Board of Revenue, Fort William.

Gentlemen,

I HAVE the honour to annex for your consideration and transmission to Government, copy of a letter* from Mr. Price, the superintendent of the Government cotton farm, begging to be allowed to make an experiment in Assam. I have no reason to think that Mr. Price had not done his best for the promotion of the object Government had in view, but the result of the experiment has been so discouraging and the sum of money expended so large, that I cannot conscientiously recommend the retention of a salaried officer to make further trials. Government will, no doubt, be very happy to facilitate by all means in its power private enterprise in growing cotton. *Dated 25 March 1856, No. 16.

I have, &c.
(signed) *R. H. Mytton,*
Officiating Commissioner of Revenue.

Commissioner's Office, Dacca Division,
Dacca, 27 March 1850.

(No. 16 of 1850.)

From Mr. *J. O. Price*, Government Cotton Planter, to *R. H. Mytton, Esq.*,
Officiating Commissioner of Dacca Division.

Sir,

I HAD duly the honour to receive through you copies of letters from the Under Secretary to the Government of Bengal and the Secretary to the Sudder Board of Revenue, forwarded for my information, communicating that his Honor the Deputy Governor of Bengal had resolved on abandoning the experimental cotton cultivation here, unless the crop on the ground be sufficient to cover the outlay.

2. It is with deep regret, after the toil of another season, and the heavy expense entailed upon Government, that I am compelled to announce the want of success in my much desired object of introducing the production of exotic cotton in this district.

3. The failure is principally to be attributed to the flat state of the country and its being completely submerged by the annual inundations, which have, unfortunately for the experiment; come earlier, lasted longer, and more completely covered the face of the country these two years past, than has been known by the oldest inhabitants. This circumstance, well known to the late Commissioner, Mr. Dunbar, has not only been destructive to the experimental farm under my charge, but has so completely disheartened the ryots, who hitherto cultivated cotton on their own account, that it has almost disappeared in these parts; and I certainly, however sanguine I may have been and mortified at my want of success, can hold out nothing to induce the Government to persevere in a longer experiment in the Dacca district.

4. In the year 1839 Mr. Emerson Tennant first brought the subject of encouraging India cotton to the notice of Mr. W. G. Johnson (my cousin, and at that time Member of Parliament for Belfast), who persuaded me (having just returned from the West Indies, where I had been engaged in agricultural pursuits for nearly 10 years) to proceed to the cotton districts of the United States, with the expectation of employment in this country; and with that prospect I went to America at a great expense, and remained there for three years, acquiring local and practical information of the system pursued in that great cotton-producing country. I then came to Calcutta with letters of recommendation from Mr. E. Tennant to Lord Ellenborough, then Governor-General of India.

5. It has since been my unremitting endeavour to prove myself worthy of the high honour conferred on me, and great has been my mortification, year after year, to see my anxious endeavours unsuccessful.

6. I would still much desire a short and not an expensive further trial at a new location, and I hope his Honor the Deputy Governor of Bengal may be induced to permit it. The object is a great national one, and even partial success would give confidence to the Government. I therefore earnestly beg your favourable recommendation that I may be permitted to try Assam, where, from the information I have been able to get from intelligent agriculturists who have been in that province, I am led to believe the land is particularly well suited for the growth of cotton upon the rich sloping plains, out of the reach of inundation. The inhabitants of Assam now grow cotton, but of a very indifferent description; and where it is so grown as their chief crop, the introduction of seed of a superior description, both native and exotic, would be easily managed, and a small experimental farm of 40 or 50 biggahs at a trifling expense might at the same time be made, and the soil and climate sufficiently tested.

I.
Bengal and
North Western
Provinces.

7. If his Honor the Deputy Governor of Bengal would permit me to try Assam, I would beg permission to proceed up there in June, to see and report upon the soil, and, with the concurrence of the Commissioner of Assam, induce the hill tribes to plant foreign seed, which I might take up with me; and at the same time, with the approval of Major Jenkins, plant out a few beegahs by way of experiment. I understand the natives in Assam grow cotton very similar to that which comes from the Tipperah country, and that amongst both it is the chief crop grown. From the Tipperah hills alone nearly a lac of maunds are annually brought in to the Sylhet and Tipperah district; and where so large a quantity of cotton of an inferior quality is grown, it is a convincing proof that the people, the soil, and the climate are well suited for its production, and by the introduction of better seed and encouragement, I do think a better description and increased cultivation might be reasonably looked for; and I trust you will be so kind as to bring this proposal to the favourable attention of his Honor the Deputy Governor of Bengal.

8. The expense will be very trifling, as the time required will be but short, and, if unsuccessful, I will feel the mortification of want of success in a great, beneficial, and national experiment; and, if otherwise, as I earnestly hope it may be, and that success crowns my exertions, I shall have the proud satisfaction of having been the humble instrument, under the Government of India, of extending the cultivation of a superior description of cotton in the vast and fertile province of Assam. With apology for the length of this address,

I have, &c.
(signed) *J. O. Price,*
Government Cotton Planter.

Dacca Government Farm, 25 March 1850.

(True copies.)
Sudder Board of Revenue, (signed) G. Plowden, Secretary.
Fort William, 16 April 1850.

(No. 442.)

No. 20. From *W. Seton Karr, Esq.*, Under Secretary to the Government of Bengal,
to *G. Plowden, Esq.*, Secretary to the Sudder Board of Revenue.

Sir,

Revenue. In reply to your letter, No. 182, of the 16th instant, I am directed by the Deputy Governor of Bengal to inform you that should Major Jenkins report favourably on the possibility of growing cotton in Assam, his Honor would not object to Mr. Price being sent to the province in June, as proposed, to examine and report upon the chance of cultivating good cotton there with advantage, Mr. Price drawing the same salary as he now does, to include all charges.

2. His Honor approves of the abandonment of the farm at Dacca, and the adjustment of its accounts.

I have, &c.
(signed) *W. Seton Karr,*
Under Secretary to the Government of Bengal.
Fort William, 27 April 1850.

EXTRACT from the Proceedings of the Government of Bengal in the Revenue Department, under date 3 July 1850.

(No. 276.)

No. 37. From the Secretary to the Sudder Board of Revenue to *J. P. Grant, Esq.*, Secretary to the Government of Bengal, Revenue Department; dated Fort William, 10 June 1850.

Sir,

Miscellaneous Department. Present: *E. M. Gordon and H. Ricketts, Esqs.* WITH reference to Under Secretary Mr. Seton Karr's letter of the 27 April last, No. 442, I am directed by the Sudder Board of Revenue to forward herewith, for the information of the Honourable the Deputy Governor of Bengal, a copy of the correspondence noted on the margin,* relative to the transfer of the experiment to grow cotton to the Assam province.

I have, &c.
(signed) *Geo. Plowden, Secretary.*
Sudder Board of Revenue.

* From Commissioner of Assam, dated 15th ultimo, No. 102, to Officiating Commissioner of Dacca, dated 10th instant, No. 176.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 217

(No. 102.)

From Major *F. Jenkins*, Commissioner of Revenue, Assam, to the Sudder Board of Revenue, Fort William; dated Gowhatty, 15 May 1850.

I.
Bengal and
North Western
Provinces.

Gentlemen,

I HAVE the honour to acknowledge the receipt of your letter, No. 32, of the 16th ultimo, calling upon me for my opinion as to the possibility of cultivating cotton in the province of Assam.

2. I would beg to refer the Board to my letter, No. 89, of the 22d May 1848, and particularly to the seventh paragraph, in which I recommended the experiment of a cotton plantation in the Muttuck district of Luckimpore.

3. My suggestion then was, that a plantation should be tried in connexion with the tea plantations, on a very limited scale. The tea plantations have since been sold, but I still consider it desirable that the experiment should be tried; and if under the superintendence of Mr. Price, of course on a much larger scale than I then contemplated, for the establishments being expensive, the cultivation should be on a scale somewhat commensurate to that expense, with the hope of its repaying the costs.

4. In my letter referred to, I have adverted at length to the reasons which induced me to make the above recommendation, and I need now only to allude to them briefly; they are as follows:

The lands in Muttuck now raise the best cotton that is produced in this province.

The small experiments that have been made with foreign seed have been attended with very successful results, as to the main object of the experiment, the quality of the wool.

The soil and climate may, therefore, be considered favourable to the growth of cotton from foreign seed.

The inhabitants are already largely engaged in the growth of cotton.

Any extent of land, that is from 50,000 to 100,000 acres of land may be obtained, free of all costs, being already the property of Government, and lying waste.

The occupation of a large portion of the waste lands of Assam by some cultivation, as cotton, that would require the breaking up of a good deal of ground, is calculated, in my opinion, to give a value to all the cultivated lands of Assam, and, with the employment amongst the ryots of the capital that would be introduced for carrying on the experimental cultivation, I conceive the cotton plantations would be eminently useful to this province; and there also appears a very fair prospect of the experiment being attended with national benefit. I believe, indeed, that in no other part of India could the experiment be made at a less cost, or with a fairer prospect of success.

I have, &c.
(signed) *Frus. Jenkins*,
Commissioner, Revenue.

(No. 176.)

From the Secretary to the Sudder Board of Revenue to the Officiating Commissioner of Revenue for the Division of Dacca; dated 10 June 1850.

Sir,

WITH reference to my letter of the 7th ult., No. 133, I am directed by the Sudder Board of Revenue to request that you will instruct Mr. Price to proceed forthwith to Assam, and to place himself in communication with the Commissioner of that Province.

Miscellaneous
Department.

2. The Board presume that the accounts in Dacca have been closed, and that there is no impediment to Mr. Price's proceeding at once to his new destination. Mr. Price will probably find the implements belonging to the Dacca farm necessary for his future operations in Assam, and may be allowed to take them with him.

Present:
E. M. Gordon and
H. Ricketts, Esqrs.

Sudder Board of Revenue, Fort William,
10 June 1850.

I have, &c.
(signed) *G. Plowden*,
Secretary.

(True copies.)
(signed) *Geo. Plowden*, Secretary.

Sudder Board of Revenue, Fort William,
10 June 1850.

(No. 618.)

From *W. Seton Karr*, Esq., Under Secretary to the Government of Bengal, to *G. Plowden*, Esq., Secretary to the Sudder Board of Revenue.

No. 38.

Sir,

I AM directed by the Deputy Governor of Bengal to acknowledge the receipt of your letter, No. 276, of the 10th instant, and to inform you that his Honor approves of the orders issued by the Board for the deputation of Mr. Price to Assam, for the purpose of inspecting and reporting on a suitable locality for the culture of cotton in that province.

Revenue.

296—Sess. 2.

E E

2. The

I.
Bengal and
North Western
Provinces.

2. The Deputy Governor will await a further report before deciding on any further operations.

I have, &c.

(signed) *W. Seton Karr,*

Under Secretary to the Government of Bengal.

Fort William,
28 June 1850.

(No. 1.)

EXTRACT from a general Letter from the Government of Bengal to the Honourable the Court of Directors in the Revenue Department (No. 19 of 1851), dated 1 November.

Mr. Price's report
on cotton cultivation
in Assam.
Revenue Pro.
9 April 1851,
Nos. 48 and 49.
Revenue Pro.
9 July 1851,
Nos. 34 to 36.

4. Your Honourable Court were informed in paragraphs 132 to 135 of the revenue despatch, No. 24 of 1850, that the experimental cotton cultivation at Dacca under Mr. Price had been abandoned, and that that gentleman had been deputed to proceed to Assam to examine into and report on the chances of growing good cotton in that province.

5. Among the papers now forwarded will be found Mr. Price's report, from which it will be seen that he had selected lands in Muttuck and the neighbourhood of Sackerah as being well suited to the cultivation of cotton, and much superior to any that he had ever seen in India. Mr. Price also reported very favourably of the Assam cotton called Dhera, as being of a very superior quality, and capable of being grown to an immense extent in Assam; and when fairly treated, likely to be found suitable for the English market.

6. In submitting Mr. Price's report the Board of Revenue, Lower Provinces, observed, that it was clear to them that cotton could only be extensively cultivated in the locality selected by that officer, by labour of coolies imported from other districts, the population of Assam being very scanty, and the people not in the habit of working for hire.

7. Under these circumstances, the Board stated that it was doubtful whether the cultivation of cotton in Assam would pay any one, much less the Government, but with such sanguine statements before them as those of Mr. Price and the local revenue authorities, they did not feel themselves justified in recommending the abandonment of the experiment, and they therefore solicited the sanction of Government to the outlay of 1,259 rupees for the expenses of the farm at Muttuck to the end of December next, as recommended by the Commissioner, in addition to what had been already sanctioned (450 rupees).

8. The Board further stated that they had directed Mr. Price to examine other parts of the country, and especially to ascertain whether labourers were procurable, and at what cost; and with reference to the produce of the farm this year, to send them an estimate of the rate at which Dhera cotton might be produced in Assam, and at what rate shipped from Calcutta.

9. The agricultural society of this place, the Board also intimated, had been applied to for a small quantity of each of the different kinds of cotton seed they might have, for the purpose of being forwarded to Mr. Price for trial in Assam.

10. The Board were informed that I authorised the further outlay of 1,259 rupees for the purpose specified by them, to the end of December next, and they were directed to report the result of this expenditure at the close of the current year.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 219

EXTRACT from the Proceedings of the Government of Bengal in the Revenue Department, under date the 9th April 1851.

(No. 150.)

From the Secretary to the Board of Revenue, Lower Provinces, to *J. P. Grant, Esq.*, Secretary to the Government of Bengal, Revenue Department, dated Fort William, 18 March 1851.

Sir,

I AM directed by the Board of Revenue to submit for the consideration and orders of the Honourable the Deputy Governor, a copy of a letter from the Officiating Commissioner of Assam, No. 53, dated the 26th ultimo, and of one to which it gave cover from Mr. Price, the superintendent of Government cotton cultivation in that province, applying for an advance of 1,000 rupees, to enable him to establish a cotton farm at Dum Duma, in Muttuck.

2. This is stated to be a more favourable locality for the cultivation of cotton, both as regards the quality of the soil and the facility of obtaining labourers, than that at first selected by Mr. Price in the vicinity of Dibrooghur.

I have, &c.
(signed) *G. Plowden, Secretary.*

(No. 53.)

From Lieutenant *James Mathie*, Officiating Commissioner of Revenue, Assam, to the Board of Revenue, Lower Provinces, Fort William, dated Gowahattee, 25 February 1851.

Gentlemen,

I HAVE the honour, at the request of Major Jenkins, who is now on duty in Upper Assam, to submit a copy of a letter, No. 8, of the 10th instant, from Mr. J. O. Price, superintendent of Government cotton cultivation, applying for an advance of 1,000 rupees, to commence a cotton farm at Dum Duma, in Muttuck.

2. I am informed that Mr. Price mentioned to Major Jenkins that he was not at first satisfied with the localities about Saikwah, to which Captain Vetch had directed him, in consequence he went nearer to Dibrooghur, where he at first began a clearance; but it now appears he is better satisfied with the lands about Dum Duma, and has determined to commence a farm there immediately; I therefore solicit the advance asked for by Mr. Price may be authorised with the least possible delay.

3. I beg to add, Mr. Price reports very favourably of the cotton now grown near Dum Duma.

I have, &c.
(signed) *James Mathie*,
Officiating for Commissioner of Revenue.

(No. 8.)

From *J. O. Price, Esq.*, Superintendent Government Cotton Cultivation, to Major *F. Jenkins, Commissioner of Revenue, Assam.*

Sir,

I HAVE the honour of informing you, that on a second and more minute examination of the lands in the neighbourhood of Dum Duma, I have determined on establishing the experimental cotton farm a short distance from that place, on the opposite bank of the river, where there is a very extensive tract of superior cotton land, the jungle on which we will be able to clear off at a much less expense than we could that on either the lands nearer to Saikwah or Dibrooghur; besides, labourers will be more easily procured there than at either of the other places. I therefore beg leave to enclose you a bill for an advance to commence operations with, which I purpose doing as soon as possible. Annexed you will please observe the purposes for which the advance is required,

I have, &c.
(signed) *J. O. Price*,
Superintendent Government Cotton Cultivation, Assam.

Saikwah,
February 1851.

	Rs.	a.	p.
Outlay required to clear jungle off 100 paras of land at 5 rupees	500	-	-
per para	-	-	-
to erect a bungalow and other houses for sundry purposes	400	-	-
for miscellaneous purposes	100	-	-
TOTAL - - - Co.'s Rs.	1,000	-	-

Board of Revenue, Lower Provinces,
Fort William, 18 March 1851.

(True copies.)
(signed) *G. Plowden, Secretary.*

I.
Bengal and
North Western
Provinces.

(No 464.)

From *W. Seton Karr*, Esq., Under Secretary to the Government of Bengal, to
A. C. Bidwell, Esq., Officiating Secretary to the Board of Revenue.

No. 49.
Revenue.

Sir,

I AM directed by the Deputy Governor of Bengal to acknowledge the receipt of the letter from your office, No. 150, dated the 18th ultimo, respecting an advance of 1,000 rupees, required by Mr. Price, the superintendent of the late Dacca cotton experimental farm cultivation, for the purpose of establishing a cotton farm at Muttuck, in Assam; and to observe, that when the experimental farm at Dacca was given up, Mr. Price was permitted, in the letter from this office, dated the 17th April 1850, to proceed to Assam, to examine into and report on the chances of growing good cotton in that province; and subsequently, when the Board, by Mr. Plowden's letter of the 10th June last, forwarded a communication from Major Jenkins, in which that officer appeared to view the project favourably, his Honor distinctly informed the Board that he would "await a further report before deciding on any further operations."

2. In the absence of any such report, as well as of all information upon the probable cost of the experiment, his Honor is unable to grant any advance, as no expense can be incurred till it be determined whether the experiment of a cotton farm is or is not to be repeated.

3. The Deputy Governor desires that the Board will inform Major Jenkins that Mr. Price's report, with a fuller estimate of the probable expense, is expected.

I have, &c.

(signed) *W. Seton Karr*,

Under Secretary to the Government of Bengal.

Fort William,

9 April 1851.

EXTRACT from the Proceedings of the Government of Bengal in the Revenue Department,
dated 9th July 1851.

No. 34.

(No. 323.)

From the Officiating Secretary to the Board of Revenue, Lower Provinces, to
J. P. Grant, Esq., Secretary to the Government of Bengal, Revenue Department,
dated Fort William, 27 June 1851.

Sir,

Land Revenue.
Present:
E. M. Gordon,
H. Ricketts, and
C. Currie, Esqrs.

WITH reference to the orders of Government, dated the 9th April last, No. 464, I am directed by the Board of Revenue to submit, for the consideration and orders of the Honourable the Deputy Governor, a letter from the Commissioner of Assam, No. 124, dated the 3d instant, and its English enclosures, forwarding Mr. Price's report on the experimental cotton cultivation in Assam, and communicating further information relative to the estimated expense of the proposed cotton farm at Muttuck.

2. Mr. Price states, that the lands in Muttuck and the neighbourhood of Saikwah are well suited to the cultivation of cotton, being much superior to any that he has previously seen in India; that it resembles more the description of soil on which the Sea Island cotton is grown in America, than any he has seen elsewhere. Mr. Price also reports very favourably of the Assam cotton called Dhera. He states, that it is of a very superior kind, easily cultivated, affording a fair sized boll, and yielding a larger proportion of wool when cleaned than any other kind of native cotton he has yet seen; that it is of a softer and more silky nature than usual in native cotton; that, notwithstanding it is often injured by the native system of gathering, it brings a much higher price than any other kind of native cotton, which leads him to think that, when fairly treated, it will be found suitable for the English market; and he adds, that it could be grown in Assam to an immense extent.

3. It is clear, however, the Board observe, that cotton could only be extensively cultivated in the locality selected by Mr. Price for the experiment by the importation of coolies from other districts. The population in Assam is very scanty, and the people are not in the habit of working for hire. It may be doubted whether the cultivation of cotton in the province would pay any one; and it is certain that it would not pay the Government to work cotton plantations with hired labour.

4. Nevertheless, with such statements before them as those furnished by Mr. Price and the local revenue authorities, the Board would not feel justified in recommending the abandonment of the experiment; and they therefore solicit the sanction of Government to the outlay of a further sum of 1,259 rupees,* for the expenses of the farm at Muttuck, to the end of December next, as recommended by the Commissioner.

5. The

* Total outlay according to Mr. Price's estimate	Rs. 1,709
Already sanctioned by Government	450
	<u>Rs. 1,259.</u>

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 221

5. The Board have directed Mr. Price to examine other parts of the country, and especially to ascertain whether labourers are procurable, and at what cost, and with reference to the produce of the farm this year, to send them an estimate of the rate at which Dheia cotton might be produced in Assam, and at what rate shipped from Calcutta.

6. The Board have also applied to the Agricultural Society for a small quantity of each of the different kinds of cotton seed they may have, for the purpose of being forwarded to Mr. Price for trial in Assam.

7. The return of the enclosures, with your reply, is solicited.

I have, &c.
(signed) A. C. Bidwell,
Officiating Secretary.

I.
Bengal and
North Western
Provinces.

(No. 124.)

From Major F. Jenkins, Commissioner of Revenue, Assam, to the Board of Revenue, Lower Provinces, Fort William, dated Gowahattee, 3 June 1851.

No. 35.
Enclosure.

Gentlemen,

WITH reference to the Board's letter, No. 41, dated 18th April last, and its enclosure from Government, requiring a report from Mr. Price with a fuller estimate of the probable expense connected with the cultivation of cotton, I have the honour to transmit a copy of a letter, No. 124, dated 26th ult., from Captain Vetch, and its enclosures* from Mr. Price relative to the work already done; with its expenditure from 11th October 1850 to a portion of May 1851, amounting to 815 rupees, and 894 rupees required to meet the expenses up to December 1851, both amounting to 1,709 rupees, of which 200 and 250 rupees were sanctioned in Mr. Under Secretary Seton Karr's letters, Nos. 1223 and 387, dated 14th December 1850, and 19th March last, received with the Board's proceedings, Nos. 130 and 29, of 20th December 1850, and 25th March last.

2. I beg to submit for the Board's information, a copy of a further correspondence as per margin,† relative to the operations connected with the cultivation of cotton under the superintendence of Mr. Price, as well as the samples of cotton alluded to in Mr. Price's letter, dated 19th ultimo, attached to the Collector's last letter noted in the margin, which will be dispatched with this in one parcel, for the inspection of the Board.

3. It appears from the letters of Mr. Price now forwarded, that he has selected for the site of the experimental farm some lands in the vicinity of Saikwah as being preferable, in his opinion, to the lands elsewhere inspected by him, and that he is quite satisfied with the qualities of the soil in its adaptation to the culture of cotton, indeed he considers it superior to any he has seen in India; he is also of opinion that one of the indigenous cottons of the district, that which he calls Dheia, is of a superior kind both as to the quality of the wool and to the quantity produced, and that it is suitable to the English markets.

4. In these opinions it is satisfactory to find that Mr. Price confirms the judgment Captain Vetch and myself had formed of the capabilities of the Muttuck country for the growth of a superior cotton, when we ventured to recommend to the Board the experimental cultivation of this article under Mr. Price's superintendence.

5. Mr. Price has cleared and fenced in a small farm of about 70 biggahs, the greater part of which he appears to have sown with the seed of the native Dheia cotton above-mentioned, and he is about to lay down a small quantity with acclimated American seed, of which, however, he has only a limited supply; and I regret to say his foreign seed, which he received from the Agricultural Society, has altogether failed.

6. Mr. Price's progress has been hitherto much retarded from the want of funds, but as he has now chosen his lands the experimental cultivation can be carried on to any extent the Board and Government may wish, and as his report is altogether favourable as to the fitness of the district for the growth of cotton, it appears to me, that after going to the expense of commencing the present farm under the supervision of a practical American planter, it is most desirable that the experiment should be thoroughly carried out; and I conceive this may be done at no great expense to the Government.

7. There is no object in cultivating cotton to any larger extent than to produce fair samples for the home markets of each kind, but I am of opinion it will be very desirable that the cultivation should be carried on for some time, both that the effects of the climate, soil and scientific culture may be observed on each quality of indigenous, acclimated and

* From Captain Vetch to Mr. Price, No. 104, dated 13th May 1851; and reply, dated 19th idem. Further letter from Mr. Price to Captain Vetch, No. 28, of 24th May 1851, with the accounts referred to.

† No. 69, dated 21st March 1851, from the Collector of Luckimpore, with its enclosure. To ditto in reply, No. 186, dated 10th April 1851. From ditto in reply, No. 123, dated 26th May 1851, and enclosures referred to.

I.
Bengal and
North Western
Provinces.

and exotic seed,* and that the natives may have the opportunity of seeing the Superintendent's mode of management, and in sharing in whatever seeds he might be able to spare; and to distribute superior seeds and encourage the ryots to cultivate their cotton grounds on the American system should I think be important points of the Superintendent's duty.

8. As remarked by Captain Vetch in the third paragraph of his letter, No. 124, it seems likewise desirable that Mr. Price, as opportunities offer, should make a tour of such parts of the Muttuck and Luckimpore districts as he has not yet visited, but I should not recommend his making any further farms at remote distances from his present head-quarters; wherever he noticed however any particular ground that seemed to deserve a trial with any variety of seed, he might either give the seed to the ryots or make small experimental cultivations by contract with them.

9. In conclusion I beg to request that the bills now submitted, amounting in the aggregate to 769 rupees, should be passed by the Board, and that the Board's sanction should be given to the Collector to advance Mr. Price the sum of 940 rupees to carry on his operations to the end of December next.

I have, &c.
(signed) *F. Jenkins*,
Commissioner of Revenue.

(No. 124.)

From Captain *H. Vetch*, Collector of Luckinpoore, to Major *F. Jenkins*, Commissioner of Revenue, Assam, dated Debrooghur, 26 May 1851.

Sir,

I HAVE the honour to acknowledge the receipt of your letter, No. 232, of the 3d instant, with copies of letters as per margin,† calling for a report on the probable success of the cultivation of cotton in the province with a fuller estimate of its expenses, to be obtained from Mr. Price, together with my own observations on the same. This report of Mr. Price's, I have now the honour to submit.‡

2. In it you will observe that he considers Muttuck and the lands in the neighbourhood of Saikwa as well suited for the cultivation of cotton, and that the soil is superior to any he has seen in India for that purpose; he also speaks highly of the quality of the native cotton called Dhera, but for want of funds he had not been able to take advantage to the utmost of the season for clearing; nevertheless about 70 biggahs had been taken up, and the clearings made from funds advanced by himself. He estimates the whole of the expense incurred and to be incurred up to the 31st December next, at 1,234 rupees, and this seems to include his assistant's salary at 50 rupees a month already sanctioned.

3. As Mr. Price is, I conclude, to be fully relied on as to his capability of judging as to the quality of the soil as well as of the native cottons, and as it is the received opinion that the Dhera cotton is of a superior quality to most of that produced in Assam, I think what he has adduced is a full warrant for recommending that the experiment which Mr. Price has taken in hand should be carried out; it does not, however, appear to me necessary that Mr. Price should remain a fixture at Saikwa to watch the progress of one on so small a scale; this I think might be left to the Assistant until the cotton has nearly reached maturity, and Mr. Price might, in the meantime, direct his attention to an inspection of other parts of Upper Assam, at least as far as can be effected by water, for during the next 4½ months land travelling in Assam is scarcely practicable.

4. Should Government not deem it expedient to retain Mr. Price to bring this experiment to maturity, I would still recommend that it be carried out under his Assistant.

5. Although there can be no doubt about the abundance of waste land in the upper part of this district suited for the growth of cotton, how far it would prove remunerative to the cotton grown with hired labour, appears to me in the present state of things very questionable; yet I do not see that it should (under good management) cost more, if so much, to grow cotton in Assam as it does in America, for I conclude the cost of slave labour there must be as great as cooly labour imported into Assam from Bengal would be.

6. Government might well afford to give grants of lands on any terms that would induce the introduction of European enterprise and foreign labour into a country so fertile and so rich

* I should recommend that he be furnished with every variety of seeds procurable, whether native, foreign, or foreign acclimated, but I am not aware how the seeds are to be procured; probably the Board might be able to put me or Mr. Price in communication with the gentlemen who may be superintending Government plantations in either of the presidencies.

† From Board of Revenue to Commissioner of Revenue, No. 41, of the 18th April 1851, enclosing copy of a letter from Government, No. 464, dated 9th April 1851.

‡ Copy of the reports from Mr. Price, Nos. 23 and 28, dated 19th and 24th May 1851, with two original accounts current for March and April 1851.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 223

rich in vegetable* and mineral† productions, intersected in its whole length by a river so favourable to steam navigation as the Burrampootur, if this could be made the means of rousing the natives from their apathy, and of giving a stimulus to industry and trade.

I.
Bengal and
North Western
Provinces.

I have, &c.
(signed) *H. Vetch*, Collector.

(No. 104.)

From Captain *H. Vetch*, Collector of Luckimpore, to *J. O. Price*, Esq., Superintendent Government Cotton Plantations, Saikwah; dated Dibrooghur, 13 May 1851.

Sir,

I HAVE the honour to enclose a copy of a correspondence from the Commissioner of Assam,† and to request you will without delay furnish the report therein called for, that I may submit it with my own observations.

† No. 232, of 3d
May 1851, with
enclosures.

I have, &c.
(signed) *H. Vetch*, Collector.

Zillah Luckimpore, Collector's Office,
13 May 1851.

(No. 23.)

From *J. O. Price*, Esq., Superintendent Government Cotton Cultivation, to Captain *H. Vetch*, Collector of Luckimpore, dated Saikwah, 19 May 1851.

Sir,

I HAVE the honour of being in receipt of your letter, No. 104, of the 13th inst., enclosing a copy of a correspondence from the Commissioner of Assam, requiring, for the information of his Honor the Deputy Governor of Bengal, a fuller report and estimate of the probable expense likely to be incurred in the cotton experimental cultivation in this district.

2. I beg leave to inform you that I am decidedly of opinion that the lands in Muttuck and the neighbourhood of Saikwah are well suited for the cultivation of cotton, being much superior to any that I have previously seen in India for that purpose, the soil of both places being composed in a great measure of a rich decomposed vegetable substance with a fair proportion of coarse granite sand in it, which are two of the principal ingredients sought after in good cotton land; it in fact resembles more the description of soil on which the Sea Island cotton is grown than any I have elsewhere seen.

3. With respect to the estimate of outlay for the present season it will now naturally differ very much from what it otherwise would have been had I received funds in time to have commenced a cultivation during the dry season in the Muttuck district; this not having been the case, and the dry season being far advanced, I considered I would be best serving Government (until I could receive funds, by which time clearing off wood land) by advancing money myself to establish a small experimental farm near Saikwah, where the first cotton in Assam is grown; and by doing which I would be enabled to test the soil in that neighbourhood, and gain experience with respect to the effects of the climate on the different kinds of cotton that we might be able to cultivate, which I will be obliged at present to limit to that of acclimated American, and the indigenous kind, called Dhera, which is a very superior kind of native cotton, easily cultivated, gives a fair sized boll, and yields a larger proportion of wool when cleaned than any other kind of native cotton I have yet seen; which is of a softer and more silky nature than usual in native cotton, but much injured at present in the field by the native system of gathering in their crop, by which the bolls after opening are much exposed to the climate, and the wool, therefore, becomes bleached and the strength of the fibre much injured, in which imperfect state it brings a much higher price than any other kind of indigenous cotton, which leads me to believe that when fairly treated it will be found suitable for the English markets, and if so could be grown here to an immense extent.

4. I have up to the present date expended in clearing off about 70 biggahs of wood land, in erecting a small godown and other necessary out-houses, and in raising a small bungalow for my own use, which is now better than half finished, the sum of 310 rupees, including my Assistant's pay for the months of March and April, which expenditure, with the accompanying estimate, I sincerely trust may meet with his Honor the Deputy Governor's sanction.

I have, &c.
(signed) *J. O. Price*,
Superintendent Government Cotton Cultivation.

* Tea, sugar, cotton, &c.
296—Sess. 2.

† Coal, iron, and gold.

I.
Bengal and
North Western
Provinces.

AN Estimate of Outlay required for the Saikwah Experiment for 1851.

	Rs.
Amount expended up to the present date, as explained in my letter, including my Assistant's salary - - - - -	340
Outlay required for the remainder of the present month, including my Assistant's salary - - - - -	94
Outlay required for the month of June, including my Assistant's salary - - - - -	140
Outlay required for the remaining six months, from the 1st of July to the 31st December, at 110 rupees per month, including my Assistant's salary - - - - -	660
TOTAL - - - Co.'s Rs.	1,234

(signed) *J. O. Price,*
Superintendent Government Cotton Cultivation.

(A true copy.)
(signed) *H. Vetch,* Collector.

(No. 28.)

From *J. O. Price,* Esq., Superintendent Government Cotton Cultivation, to Captain *H. Vetch* Collector of Luckimpore, dated Saikwah, 24 May 1851.

Sir,

I HAVE the honour to acknowledge the receipt of your letter, No. 117, of the 19th instant asking for a more detailed account of the probable outlay of this year in the cotton experiment, which I have the pleasure of annexing, and also of enclosing you the monthly accounts of our outlay up to the 1st of May.

I have, &c.
(signed) *J. O. Price,*
Superintendent Government Cotton Cultivation.

AMOUNT of Outlay required for 1851.

As per Accounts rendered for the months of March and April - - - - -	Rs.	Rs.
Outlay already paid for the month of May - - - - -	46	294
Balance required for ditto, at 140 rupees per month - - - - -	94	
TOTAL - - -	140	140
Outlay required for the month of June, viz.:-		
To F. P. Kingg, Assistant and Writer - - - - -	50	
Ditto, 1 Burkundauz - - - - -	5	
Ditto, 2 Cooly Sirdars - - - - -	7	
Ditto, 26 Coolies at 3 rupees each per mensem - - - - -	78	
TOTAL - - -	140	140
Outlay required for the month of July:-		
To F. P. Kingg, Assistant and Writer - - - - -	50	
Ditto, 1 Burkundauz - - - - -	5	
Ditto, 2 Cooly Sirdars - - - - -	7	
Ditto 16 Coolies at 3 rupees each per mensem - - - - -	48	
TOTAL - - -	110	110
Outlay required for the month of August - - - - -		110
Ditto ditto September - - - - -		110
Ditto ditto October - - - - -		110
Ditto ditto November - - - - -		110
Ditto ditto December - - - - -		110
TOTAL - - - Co.'s Rs.		1,234
Add expenditure up to 10th March 1851 - - - - -		475
TOTAL - - -		1,709

(True copy.)

(signed) *H. Vetch,* Collector.

(True copies.)
(signed) *F. Jenkins,*
Commissioner of Revenue.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 225

(No. 69)

From Captain *H. Vetch*, Collector of Luckimpore, to Major *F. Jenkins*, Commissioner of Revenue, Assam; dated Camp Kollabarree, 31st March 1851.

Sir,

I HAVE the honour to enclose a copy of a letter from Mr. Price,* Superintendent of Government Cotton Cultivation. I cannot myself think the difficulties so formidable as they appear to Mr. Price.

I have, &c.
(signed) *H. Vetch*, Collector.

I.
Bengal and
North Western
Provinces.

(No. 12.)

From *J. O. Price*, Esq., Superintendent Government Cotton Cultivation, to Captain *H. Vetch*, Collector of Luckimpore, Saikwa; dated 18th March 1851.

Sir,

I REGRET to inform you that as the season for cultivation advances our difficulties appear to increase since I last had the honour of writing to you. I have not been able to visit Dum Duma on account of the use of elephants here being always required for other purposes, neither have I yet received any reply to my application through the Commissioner for funds to commence operations with, but what is worse than all is the difficulty that we have in procuring labour; in fact, had it not been that the natives here are pushed at present for payment of their khazana, I do not think we should have been able to procure any coolies, but necessity has made a few hands accept of employment; however, I am afraid as soon as they get over their present difficulty they will leave us again, which convinces me that without getting coolies from some other part of Assam it is impossible for us to succeed here, and as the season is so far advanced I am of opinion, after giving the subject due consideration, and taking into account the difficulties that we have at present to contend with, that we will have to limit our proceedings this season to two small experiments, one here with Dherah Kupas, which is considered the best suited for this soil, and the other at Dum Duma with Dhaniah, which is the sort that succeeds best there; if we can get this effected it will enable us to test the soils of the two places at a comparatively small expense, and thereby enable us to go ahead on a more extensive scale during the next dry season with increased confidence.

2 The small farm here I am establishing, a short way up the Khall, where there is land that I will be able to clear off much easier than that on the road to Dum Dum, which I before reported favourably of, besides I will be able to take my boat up to that place during the rains, so that should I not have a house erected in time to live in, I will have it for that purpose, and go only occasionally to Dum Duma to examine the cultivation there, as I have been informed that it would be a most dangerous step to go and settle down there for good during the rains without the lands having been some time previously cleared off, with the disadvantage also of no medical assistance near to it; but these disadvantages we will, I hope, be better able to guard against next dry season; when proper coolies and other necessary arrangements have been prepared, we will be able to give the district a fair trial on an extended scale.

I have, &c.
(signed) *J. O. Price*,
Superintendent Government Cotton Cultivation.

(True copy.)
(signed) *H. Vetch*, Collector.

(No. 186.)

From Major *F. Jenkins*, Commissioner of Revenue, Assam, to Captain *H. Vetch*, Collector, Luckimpore; dated Gowahatty, 10th April 1851.

Sir,

I HAVE the honour to acknowledge the receipt of your letter, No. 69, of the 21st ultimo, forwarding copy of Mr. Price's letter, No 12, of the 18th idem, reporting his progress in the cultivation of cotton, and which I am sorry to say appears to me very discouraging.

2. If Mr. Price found so much difficulty in clearing his land &c., at Saikwah, I think it much to be regretted that he did not at once return to Dibrooghur when advised to do so by us during my visit to that station. I fear the Government is now throwing away money without

* No. 12 of the 18th March 1851.

L
Bengal and
North Western
Provinces.

without even the hope of a fair experiment, but I should like to know more in detail what Mr. Price has done, what places he has visited, and what led him to prefer the neighbourhood of Saikwah; and when he has completed his sowings I would beg to be informed of the actual extent of land sown.

I should like also to have samples of the cottons called Dheerah and Dhaniah, with observations on the qualities in which they differ.

3. I beg to be furnished with all convenient expedition with a specimen of the cotton sanctioned to be cleaned in my letter, No. 646, dated 8th November last, with reference to yours, No. 649, dated 23d October 1850.

I have, &c.
(signed) *F. Jenkins*,
Commissioner of Revenue.

(No. 123.)

From Captain *H. Vetch*, Collector of Luckimpore, to Major *F. Jenkins*, Commissioner of Revenue, Assam; dated Debrooghur, 26 May 1851.

Sir,

I HAVE the honour to acknowledge the receipt of your letter, No. 186, of the 10th ultimo, directing me to call on Mr. Price for further information respecting the progress and extent of cotton cultivation, and requiring samples of the cotton of the country. I now beg to enclose copies of that gentleman's replies, No. 24 and 25, of the 19th and 20th instant, in which he reports very favourably as to the quality of the land at Saikwah, and also favourably on the quantity of the native cotton called Dherah. I also beg to forward two samples of cotton received from him.

I have, &c.
(signed) *H. Vetch*, Collector.

(No. 76½.)

From Captain *H. Vetch*, Collector of Luckimpore, to *J. O. Price*, Esq., Superintendent of Government Cotton Cultivation, Saikwah, dated Dibrooghur, 25 April 1851.

Sir,

WITH advertence to your letter, No. 12, of the 18th ultimo, I have the honour to annex a copy of a letter, No. 186, of the 10th instant, from the Commissioner of Assam, requesting further information on the subject of your operations, and calling for samples of the Dherah and Dhaniah cottons, as well as for the cotton purchased on account of Government, all of which information, and the samples adverted to, I request you will be so good as to send me for transmission to him.

I have, &c.
(signed) *H. Vetch*, Collector.

(No. 25.)

From *J. O. Price*, Esq., Superintendent Government Cotton Cultivation, to Captain *H. Vetch*, Collector of Luckimpore, dated Saikwah, 20 May 1851.

Sir,

I HAVE the honour of acknowledging the receipt of your letter, No. 76, of the 25th ultimo, enclosing a copy of the Commissioner's letter, No. 186, of the 10th April, requiring further information respecting our progress in the cotton experiment, and in which I regret to observe that the Commissioner thinks our progress very discouraging, but when he takes into consideration that we have not received any funds for cultivation, I hope he will think more favourably of our efforts, and particularly so, as far as our future prospects are concerned.

2. With respect to my selecting this neighbourhood for trying the experiment when it was left optional with me to select either of the other two places, Dum Duma or Debrooghur, if I thought I could succeed better there, I beg leave to state that I did so from being convinced from what I had seen of the lands in the neighbourhood of Debrooghur, that the lands adjacent to Dum Duma and Saikwah were both much better suited for the cultivation of cotton than those there, and with respect to the difficulties that it appeared to me at that time we would have to contend with, I found as I became more acquainted with this part of the country and its inhabitants, that with proper means we could easily overcome many of them, but not being in possession of that, we have had to contend with the worst of all difficulties in agriculture, want of funds.

3. I have

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 227

I.
Bengal and
North West
Provinces.

3. I have cleared off about 70 beegahs of woodland and jungle, and erected a strong fence round the greater part of it, which will be sufficient for the purpose of a small experimental farm until we can proceed on a larger scale with a certainty of picking a remunerative crop. I have also erected the necessary out-offices and a small bungalow for my own use, which is now better than half finished.

4. For some time after I arrived here I was unable to visit any place, in fact to leave my own boat, from severe rheumatism, but on my recovery I visited the several places where cotton was cultivated in the neighbourhood of Sudyā, Dum Dum, Saikwah, as often as I could obtain an elephant to do so, which was only occasionally, but that I do not believe we have any reason to regret, as I am satisfied that I could not have found finer land anywhere than that in this neighbourhood, and in that part of Muttouk adjacent to Dum Dum.

5. In reply to the information required respecting the quantity of land sown, I beg to inform you that I purpose commencing to plant some acclimated American seed in a few days, but the quantity of exotic seed that we will be able to plant will be very limited, as the seed that was received from the Agricultural Society in tin boxes has lost all its germinating qualities, and also a great part of that which I brought up last year cannot now be depended upon, but I will have enough to try it as an experiment; the remainder of the land I purpose planting in June and July with Dhera seed, from the cotton that we are now cleaning, and when finished I will duly inform you of the quantity of land planted, and with our proceedings generally, which I only regret to add will, as a natural consequence, be very limited for a time, at least until Government may be pleased to enable us to proceed otherwise.

I have, &c.

(signed) J. O. Price,
Superintendent Government Cotton Cultivation.

(No. 24.)

From J. O. Price, Esq., Superintendent Government Cotton Cultivation, to Captain H. Vetch, Collector of Luckimpore; dated Saikwah, 19 May 1851.

Sir,

I HAVE the honour of forwarding to you the samples of cotton required by the Commissioner, and I regret that I could not do so sooner, as I found it difficult to get a fair sample of the Dhanīa kind, as it is picked in the months of August and September.

2. The kupas, called dhera here, is in my opinion much superior to the Dhanīa kind, and sells at a higher price, being finer in staple, and altogether a better description of wool; it is planted in June and July, and picked in November and December; it is easily cultivated, and in my opinion, if fairly treated in the field, would be a very superior article to the generality of indigenous cotton. The cotton we have purchased, and are now cleaning, is of this description, out of which the sample is sent.

3. The Dhanīa description of kupas is planted in March and April, among the dhan* that is planted in those months, and picked in August and September; it is used principally in making coarse cloths, and is inferior both in quality and price to the above description.

I have, &c.

(signed) J. O. Price,
Superintendent Government Cotton Plantation.

(True copies.)
(signed) H. Vetch, Collector.

(True copies)
(signed) F. Jenkins,
Commissioner of Revenue.

* Rice cultivation.

I.
Bengal and
North Western
Provinces.

GOVERNMENT Neerj Cotton Cultivation.—Account for March 1851.

DATE.	NATURE OF TRANSACTION.	AMOUNT.
1851:	<i>Dr.</i>	
11 March	To advanced the following named coolies, Muroo, Palon, Koornygam, Dhalow, Ohoura, Bogara, Pohur, Ratipohur, Gonack, Darjiling, Money, Lamyé, Goomhin, Jassuck, Poah, and Kougal, one rupee each -	<i>Rs. a. p.</i> 16 - -
- "	" Kootack, coolie sirdar - - - - -	2 - -
15 "	" Comsaw and Kartick, coolies, one rupee each - -	2 - -
- "	Paid for 135 bamboos to make godown mechan to keep cotton - - - - -	1 14 -
- "	" For 11 wooden kerkies to clean cotton with, at four annas each - - - - -	2 12 -
- "	" Capt. E. F. Smith for eight axes, at eight annas each, as per receipt - - - - -	4 - -
- "	" For 20 pieces of mismie bagging cloth, at two annas each -	2 8 -
16 "	Advanced Bagatee, Patol, Rouga, Petah and Metoo, coolies, one rupee each - - - - -	5 - -
17 "	" Bogora, Lamyé, Pohur, Ratipohur, Poah, Money, Darjiling and Comsaw, coolies, eight annas each -	4 - -
- "	" Holiram and Gum, coolies, one rupee each - - - - -	2 - -
- "	Paid hire for dawk boat for bringing my chuprasee from Dibrooghur - - - - -	- 6 -
19 "	Advanced Palow, coolie - - - - -	- 8 -
- "	" Badle, Tiebung, Buddle, Doe, Joduram, Soug, and Soug Cluny, one rupee each - - - - -	7 - -
20 "	" Bagatee, Rattipohur, Comsaw, Rouga, Dhalan, Ohame and Karkick, coolies, eight annas each - - - - -	3 8 -
22 "	" Dhoneram, Lawbur, Sring and Maymara, one rupee each	4 - -
25 "	" Kookaram, coolie, Abdool, Audit, Koouga, and Hindura, one rupee each - - - - -	5 - -
- "	" Tong, coolie - - - - -	1 - -
26 "	Paid hire of two dingees for five days for carrying thatching grass, at one anna per day - - - - -	- 10 -
- "	Advanced Mahomed Jan, Codir, Osmat and Buddoo, coolies, three rupees each - - - - -	12 - -
31 "	Paid Barret, burkundauz, from 1st January up to date, at five rupees per mensem - - - - -	15 - -
- "	TOTAL Co.'s Rs. - - - - -	91 2 -
- "	" F. P. King, Assistant, his salary unpaid - - - - -	50 - -
	TOTAL Co.'s Rs. - - - - -	141 2 -

<i>Cr.</i>	<i>Rs. a. p.</i>
By Balance due to Mr. J. O. Price - - - - -	91 2 -
Ditto ditto Mr. F. P. King - - - - -	50 - -
TOTAL Co.'s Rs. - - - - -	141 2 -

Saikwa Government Farm, }
31 March 1851. }

(signed) J. O. Price,
Superintendent Government Cotton Cultivation.

(signed) F. Jenkins,
Commissioner of Revenue.

GOVERNMENT

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 229

I.
Bengal and
North Western
Provinces.

GOVERNMENT Neej Cotton Cultivation.—Account for April 1851.

DATE.	NATURE OF TRANSACTION.	AMOUNT.
1851: 2 April	<i>Dr.</i> To advanced the following named coolies, Palon, Bogora, Pohur, Samyc, Hooliram, Comsaw, Pow, Maranga, Jassuck, Poah, Kookaram and Luchau, one rupee each	<i>Rs. a. p.</i> 12 - -
- "	" Darjilling, Bakow, Patgano, Chow and Thouglow, coolies, one rupee each	5 - -
5 "	" Abdool, coolie	2 - -
- "	" Paid three Doom Mullas for 13 days bringing implements from Debroo, at two annas each per day	4 1 -
- "	" Boat hire for same for 13 days, at one anna per day	- 13 -
6 "	" Advanced Bagatee and Kartick, coolies, one rupee each	2 - -
- "	" Paid Petah and Patol, coolies, for two days, at three rupees per mensem each	- 3 -
- "	" Pesigam, coolie, for 1½ day	- 2 3
- "	" Rootock, coolie sirdar, for five days, at four rupees per month	- 10 -
- "	" Advanced Money, coolie	1 8 -
9 "	" Pur, Metoo, Lawhur, Sring and Doe, coolies, two rupees each	10 - -
- "	" Sedaram, coolie	2 - -
- "	" Pesigam, ditto	1 - -
- "	" Paid for dabbing the godowns tatees	- 3 9
10 "	" For bamboos	- 8 -
- "	" Advanced Pan, coolie	1 8 -
- "	" Hoolram, Ledungam, Lachye, Dhalan, Pohur, Buddle, Dhomram, Palow, Comsow, Poah, Sedaram, Kalimohun, Pesigam, Metoo, Luchow, Patgano, 2d Pohur and Kookoram, one rupee each	18 - -
18 "	" Bougal, Dhole, 2d Poah, Bhobogam, Ram, Juttee, Hindooram, Navot and Sonamdee, one rupee each	10 - -
21 "	" Pominal, coolie	1 4 -
- "	" Kookaram und Abdool, one rupee each	2 - -
- "	" Paid hire, coolie	- 5 -
- "	" Ditto for mats	4 12 -
- "	" Ditto for six mismie dows, at one rupee each	6 - -
- "	" Advanced Cadir, Buddoo, Osmot and Mahomed Jan, three rupees each	12 - -
30 "	" Paid Barret, burkundauz, his salary	5 - -
- "	" TOTAL Co.'s Rs.	102 14 -
- "	" F. P. King, Assistant, his salary unpaid	50 - -
- "	" TOTAL Co.'s Rs.	152 14 -

<i>Cr.</i> By Balance due to Mr. J. O. Price	<i>Rs. a. p.</i> 102 14 -
Ditto ditto Mr. F. P. King	50 - -
TOTAL Co.'s Rs.	152 14 -

Saikwa Government Farm, }
30 April 1851.

(signed) J. O. Price,
Superintendent Government Cotton Plantation.

(signed) F. Jenkins,
Commissioner of Revenue.

GOVERNMENT ASSAM.—Cotton Experiment.

DATE.	NATURE OF TRANSACTION.	AMOUNT.
	<i>Dr.</i>	
11 October -	To paid Peroo Manjee for hire of his Panse boat for three months, conveying Government farming implements and cotton seed, &c. to Debrooghur, at 52 rupees per mensem, as per receipt -	Rs. a. p. 156 - -
31 December	" Barret, burgundaz, his salary from the 1st of July to the 31st December, at five rupees per mensem -	30 - -
21-January -	" Bhoronath, darogah, for purchase of a shed to store cotton, &c. in, as per receipt -	6 - -
- " -	" For coolie hire removing and erecting same -	4 - -
- " -	" For grass to partly re-thatch the roof with -	1 8 -
- " -	" For bamboos to make mechans for cotton -	1 - -
- " -	" For belt to tie mechan with -	- 8 -
- " -	" For eight pieces of mismie bagging, at two annas each -	1 - -
10 March -	" To Minchaud Keiah for 100 maunds of dhera Kupas, at Rs. 2. 12. per maund, as per receipt -	275 - -
	TOTAL Co.'s Rs. - - -	475 - -

1850:	<i>Cr.</i>		Rs. a. p.
23 December	By amount received for miscellaneous purposes - - - -		200 - -
	Ditto ditto for the purchase of cotton - - - -		275 - -
	TOTAL Co.'s Rs. - - -		475 - -
	By debit side brought over - - - -		475 - -
	BALANCE - - -		- - -

Saikwa, 19 April 1851.

(signed) *J. O. Price,*
Superintendent Government Cotton Cultivation.

(signed) *F. Jenkins,*
Commissioner of Revenue.

No. 36.

(No. 858.)

From the Under Secretary to the Government of Bengal to *A. C. Bidwell, Esq.,*
Officiating Secretary to the Board of Revenue.

Sir,

Revenue.

I AM directed by the Deputy Governor of Bengal to acknowledge the receipt of your letter, No. 323, of the 27th ultimo, and to inform you that his Honor has been pleased, on the Board's recommendation, to authorise a further outlay of 1,259 rupees for the expenses of the experimental cotton farm at Muttuck, in Assam, under Mr. Price, to the end of December next. His Honor will expect a report of the result of this expenditure at the close of the present year.

2. The original enclosures of your letter are returned, copies having been kept for record.

I have, &c.

Fort William, 8 July 1851.

(signed) *W. Seton Karr,*
Under Secretary Government of Bengal.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 231

EXTRACT Public Letter from Bengal, dated 28 August (No. 16) 1851.

120. Under the representation submitted by the Board of Revenue, I obtained the sanction of the Government of India to the salary of the Assistant of Mr. Price, the Superintendent of the cotton cultivation, being raised from 20 rupees to 50 rupees during the period that Mr. Price's services might be required in Assam.

I.
Bengal and
North Western
Provinces.

Revenue Pro.
9 April 1851.
Nos. 25 to 28,
and order.

EXTRACT from the Proceedings of the Government of Bengal, in the Revenue Department, under date 9th April 1851.

(No. 525.)

From the Secretary to the Sudder Board of Revenue to *J. P. Grant*, Esq., Secretary to the Government of Bengal, Revenue Department; dated Fort William, 8 November 1850.

No. 25.

Sir,

I HAVE the honour, by direction of the Sudder Board of Revenue, to submit herewith a copy of a letter, dated the 24th ultimo, No. 271, from the Commissioner of Assam, and of one to his address from the Government cotton planter, and to recommend that the Assistant lately allowed to Mr. J. O. Price, in Dacca, at 30 rupees a month, may be employed in the same capacity in Assam, on a salary of 50 rupees.

Miscellaneous
Department.

Present:
E. M. Gordon and
H. Ricketts, Esqrs.

I have, &c.

Sudder Board of Revenue.

(signed) *Geo. Plowden*, Secretary.

(No. 271.)

From Major *F. Jenkins*, Commissioner of Revenue, Assam, to the Sudder Board of Revenue, Fort William; dated Gowhattee, 24 October 1850.

Gentlemen,

I HAVE the honour to forward a copy of a letter, No. 12, of the 19th instant, from Mr. J. O. Price, reporting that the assistant who was allowed him at Dacca, on a salary of 30 rupees a month, refuses to join him in Assam under 50 rupees a month.

2. Mr. PRICE told me he thought the person referred to would be of the greatest use to him in superintending the cultivation during his absence to inspect the country, or from sickness, or to be deputed to inspect ryots' cultivations; and as he was allowed an assistant at Dacca, I presumed the same aid would be granted him in this province, and I desired Mr. Price to write the individual in question, to know whether he was willing to come up or not, and I beg to submit the result of the reference for the Board's orders. An Assistant I should think likely to be very u-eful, especially in case of occasional illness, and I am sorry to see that Mr. Price is now labouring under an attack of rheumatism.

3. The salary seems moderate for one, who Mr. Price mentioned, was a very efficient Assistant; and I observe he writes English well. I would therefore recommend that Mr. Price be allowed to engage his services at 50 rupees a month.

I have, &c.

(signed) *F. Jenkins*,
Commissioner of Revenue.

Bengal and
North Western
Provinces.

(No. 12.)

From *J. O. Price*, Esq., Superintendent Government Cotton Cultivation, to Major *F. Jenkins*,
Commissioner of Revenue, Assam.

Sir,

I HAVE the honour of enclosing you the reply that I received from my late Assistant at Dacca to the letter that I wrote to him by your direction, offering him 30 rupees per mensem to come up here and hold the same appointment that he formerly did under me. You will see what he says on that subject, and please let me know, at your convenience, your wishes respecting my employing him. He would be at considerable additional expense in coming up here, as he will still have to keep his house in Dacca for his family and his old grandmother, whom he supports.

I regret to inform you that I have been suffering most severely from rheumatism, first in my right arm, and latterly in my left knee, which is still very painful.

I have, &c.

(signed) *J. O. Price*,

Superintendent Government Cotton Cultivation.

(True copy.)

(signed) *F. Jenkins*,

Commissioner of Revenue.

Sudder Board of Revenue, Fort William,
8 November 1850.

(True copies.)

(signed) *Geo. Plowden*, Secretary

(No. 1199.)

No. 26.

From *W. Seton Karr*, Esq., Under Secretary to the Government of Bengal, to *W. Grey*, Esq.,
Under Secretary to the Government of India, Home Department.

Revenue.

Sir,

I AM directed by the Deputy Governor of Bengal to forward the accompanying letter from the Secretary to the Sudder Board of Revenue, No. 525, of the 8th ultimo, relative to an Assistant required for Mr. Price, superintendent of Government cotton cultivation, now on deputation in Assam.

2. As the individual whom Mr. Price had for his Assistant at Dacca has refused to proceed to Assam upon the salary of 20 rupees, which he received at Dacca, it is proposed to grant him a higher allowance of 50 rupees per mensem, in consideration of the distance he will have to go, and of the additional expense to which he will be put. Both the Board and the Commissioner recommend this, and his Honor submits the proposition for the sanction of the Government of India.

3. The usual tabular statement accompanies.

I have, &c.

(signed) *W. Seton Karr*,

Under Secretary to the Government of Bengal.

Fort William, 5 December 1850.

BENGAL

(No 27.)

BENGAL REVENUE DEPARTMENT.

290—Sess. 2.

Y E A R.	REVENUES.		CHARGES.		TOTAL.		NET.	
	Ordinary.	Extraordinary.	Ordinary.	Extraordinary.	Revenues.	Charges.	Surplus.	Deficit.

Extract from Home Department, Government of India.		Office to which the Proposition refers.	NATURE OF CHARGES.				PROPOSITION.				Casual, or Extraordinary.	GROUNDS of PROPOSITION.	Local Government's Recommendation.	Orders of the Government of India.			
			Present Scale.		Proposed Scale.		Permanent.		Temporary.					Home Department.	Financial Department.		
No.	Date.					Increase per Month.	Decrease per Month.	Increase per Month.	Decrease per Month.				Remarks.	Remarks.	Orders.		
		Superintendent of the Government Cotton Cultivation in Assam.	A writer	Rs. a. p. 80 - -	A writer	Rs. a. p. 50 - -	- - -	- - -	Temporary	Rs. a. p. 80 - -	- - -	- - -	- - -	- - The writer, from his experience in Duoca under Mr. Price, will be of great assistance to that gentleman when in Assam; it is therefore proposed to secure his services on the increased salary of 50 rupees for such time as Mr. Price may be employed in that locality.	Favourable.		

Fort William,
5 December 1850.W. Seton Karr,
Under Secretary to the Government of Bengal.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 233

I.
Bengal and
North Western
Provinces.

I.
Bengal and
North Western
Provinces.

No. 28.

Home Depart-
ment, Revenue.

(No. 313.)

From *W. Grey*, Esq., Under Secretary to the Government of India, to *W. Seton Karr*,
Esq., Under Secretary to the Government of Bengal.

Sir,

I AM directed, in reply to your letter, No. 1199, dated the 5th December last, with original enclosure (herewith returned), to convey the sanction of the President in Council to the raising of the salary of the writer employed under Mr. J. O. Price, Superintendent of the Government cotton cultivation, from 30 to 50 rupees per mensem, during the period that Mr. Price's services may be necessary in Assam.

I have, &c.

(signed) *W. Grey*,

Under Secretary to the Government of India.

Council Chamber, 28 March 1851.

Home Department, Revenue, 27 August (No. 13) 1852.

To the Honourable the Court of Directors of the East India Company.

Honourable Sirs,

IN para. 2 of the despatch from this department (No. 17) 1843, dated the 16th December, your Honourable Court were informed that on the failure of the experiments made in the North-western Provinces for the production of cotton, under the superintendence of the American planters sent out by your Honourable Court, the services of one of them, Mr. Price, were engaged on a trial made for the improvement of the cotton of the Dacca district. The failure of this experiment was also reported to your Honourable Court in para. 8 of our despatch, No. 9, dated the 23d August 1850. Mr. Price has since been employed by the Government of Bengal in conducting another experiment made in the Muttuck country in Upper Assam, which has been attended with the same unfavourable result.

2. It is now proposed by the Bengal Government to abandon this undertaking, and to dispense with Mr. Price's services altogether; and as there appears to be no encouragement for persevering in these very unsuccessful and expensive experiments, we have directed that they be discontinued.

We have, &c.

(signed) *Dalhousie*,
F. Currie,
J. Lewis.

Fort William, 27 August 1852.

(No. 819.)

No. 4. From the Under Secretary to the Government of Bengal to *A. R. Young*, Esq., Under Secretary to the Government of India, Home Department; dated Fort William, 5 August 1852.

Revenue.

Sir,

WITH reference to the letter, No. 38, from this office, dated the 11th January 1850, and to Officiating Secretary Mr. Grey's reply, No. 62, of the 25th idem, I am directed by the Honourable the Deputy Governor of Bengal to forward copies of the letters noted on the margin,* showing the result of the experiment instituted in the Muttuck country in Upper Assam, under the superintendence of Mr. Price, on the abandonment of the experimental cotton cultivation in Dacca in May 1850.

2. His

* From Secretary Board of Revenue, No. 182, dated 11th May 1852, with enclosure. From Secretary Board of Revenue, No. 226, dated 15th June 1852. From Secretary Board of Revenue, No. 243, dated 2d July 1852.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 235

2. His Honor observes, that Mr. Price's employment since 1843 has been attended with great expense, and with no corresponding benefit to the country. He therefore concurs in opinion with the Board of Revenue that the experiment in Assam should be abandoned.

3. As Mr. Price, the superintendent of the cotton cultivation, has no claim whatever upon the Government, his services, his Honor thinks, might at once be dispensed with.

I.
Bengal and
North Western
Provinces.

I have, &c.
(signed) *J. W. Dalrymple,*
Under Secretary to the Government of Bengal.

(No. 182.)

No. 5.

From the Secretary to the Board of Revenue, Lower Provinces, to *J. P. Grant, Esq.,* Secretary to the Government of Bengal, Revenue Department; dated Fort William, 11 May 1852.

Sir,

WITH reference to the correspondence specified on the margin,* I am directed by the Board of Revenue to submit herewith a copy of a letter from the Commissioner of Assam, dated 13th ultimo, No. 76, and its enclosures, reporting on the issue of the experiment instituted in the Muttuck country, in Upper Assam, for the growth of cotton.

Land Revenue.
E. M. Gordon,
H. Ricketts and
E. Currie, Esqrs.

2. Mr. Price selected a locality at Saikwah for the site of his experimental farm, and the correspondence now forwarded shows that a sum of Rs. 9,489. 1. 5. has been expended upon the experiment. The cost of superintendence is heavy, and labour is extremely dear, and scarcely procurable, and the Commissioner is of opinion that unless the experiments are continued for some years nothing will be known as to the capability of that part of India to raise cotton fit for the English manufactures.

3. In regard to the experiment, so far as it has gone, the Commissioner considers it to have entirely failed in Muttuck, and he would now recommence it at Tezpore, lower down the Assam valley, where labourers are more easily procurable. If the Government decide on renewing the experiment, he proposes that from 300 to 500 acres be taken up for growing native cotton and the most likely foreign kinds, and that the trial be continued for five or six years. The surplus seed to be distributed to two or three collectors to be simultaneously experimented on by them in different localities in their districts, under the instructions and occasional inspection of Mr. Price.

4. The Commissioner is fully persuaded that the limited and partial experiment hitherto made by Mr. Price will not, if continued, lead to any satisfactory results; and unless it be undertaken on a larger and more comprehensive scale, and under the immediate control and responsibility of the local collectors, he does not advise its continuance.

5. The Board have seen nothing as yet of the cotton grown at the farm, if any has been grown, nor has the Commissioner been furnished with any account of the produce of the farm; but a quantity of cotton (25 bales, said to contain 25 maunds and 25 seers), procured by Mr. Price on the spot, and cleaned under his superintendence, was lately sent to them by the steamer. The report of the Calcutta brokers on the article was, however, so unfavourable that it was deemed a useless expense to ship the cotton to England, as the Commissioner suggested, and it was sold in Calcutta by Messrs. Colin Campbell & Burgett, at Rs. 10. 4. the maund, which the Board believe is little more than the commonest native cotton would fetch. From a letter just received, the Board learn that the above 25 maunds were the produce of 84 maunds of raw materials purchased by Mr. Price for 231 rupees, and that the cost of cleaning, including the charge of transport to Gowhattee, was Rs. 249. 12. more, making the total cost Rs. 480. 12., or about 19 rupees the maund, without including the charge of conveyance from Gowhattee to Calcutta. The cost of production, therefore, of the article in its clean state, at the spot, is nearly double the price at which it sold in Calcutta.

6. The Board think it useless to incur any further expense on these experiments, and they recommend that the services of Mr. Price be dispensed with.

I have, &c.
(signed) *C. H. Lushington,* Secretary.

* Board to Government, dated 16 April 1850, No. 122; Government to Board, dated 27th Idem, 1850, No. 442; Government to Board, dated 28th June 1850, No. 618; Board to Government, dated 18th March 1851, No. 150; Government to Board, dated 9th April 1851, No. 464; Board to Government, dated 27th June 1851, No. 323.

(No. 76.)

From Lieutenant-Colonel *F. Jenkins*, Commissioner of Revenue, Assam, to the Board of Revenue, Lower Provinces, Fort William, dated Gowhatty, 13 April 1852.

Gentlemen,

WITH reference to your proceedings as per margin,* I have the honour to forward a copy letter from Captain Dalton, collector of Luckimpore, No. 107, of the 7th instant, submitting a report from Mr. Price on the cotton cultivation at Saikwah, and on the aptitude of the lands lower down for the growth of that article.

2. Mr. Price has only lately returned from a tour of inspection, which has been one cause of the delay in sending in this report, and a further delay has been occasioned by my being under the necessity of returning the report to Captain Dalton, who, in the first instance, transmitted it to me without any observations of his own. That deficiency has now been supplied.

3. From the latter part of the fourth para. of Captain Dalton's letter, that officer sums up the result of Mr. Price's proceedings at Saikwah by stating that though the soil there is well adapted to the cultivation of cotton, the place is too remote and labour too scarce and dear to allow of a fair experiment being made, and he therefore recommends the removal of Mr. Price's establishment to some other locality lower down the valley.

As in this proposition Mr. Price also concurs, and advises a trial in the neighbourhood of Tezapore, I have taken it upon myself to direct his taking measures to close his farm at Saikwah, and to proceed to Tezapore pending the further orders of the Board and Government; and I trust my letter to the Collector to this effect, No. 188, of this date, a copy of which accompanies, will meet with the Board's approval.

4. The first part of the fourth paragraph of Captain Dalton's letter mentions the expenses hitherto incurred in this experiment, viz., Rs. 9,489. 1. 5., but there is no information given in these letters to show what quantity of cotton has been planted or gathered by Mr. Price; but Mr. Price, in his third paragraph, supposes the Dherah cotton could be produced on the spot at Rs. 2. 8. a maund, and be sent into the market, cleaned, at from 10 to 12 rupees per maund.

5. I would not suppose it was expected that any cotton grown by Mr. Price could be raised at these prices, or, at least, not in the first two or three years of the experiment, for much time has necessarily been lost in choosing and clearing the ground, in collecting coolies and instruments, &c., and time has been likewise lost in obtaining the necessary advances; but an experiment of this kind, under a European superintendent, introducing new machinery at which the natives were to be taught, could not possibly succeed, except under a far greater outlay of money, and that continued for several years. The great objects of the experiment being, as I suppose, to conduct a series of experiments on the culture of both foreign and indigenous cottons, and to introduce amongst the natives an improved system of culture, and to distribute largely amongst them better kinds of seeds.

6. With regard to the trial of foreign seeds, I believe Mr. Price has been able to do nothing, from the want of dispatches of good fresh seeds of various kinds at the proper season (and the time of planting in a new climate cannot be ascertained in one or two years), Mr. Price's experiments have thus far been confined to the indigenous cotton, and the result of his experience is, that "the cotton of this district" (Muttock) "would, if fairly tried, be better suited for the home market than any that (he) has seen in Bengal."

This is thus far, I think, satisfactory, and in recommending Mr. Price's making his experiments first in Muttock, I was induced to do so by a belief that the cotton of the country was superior to the usual growth of other parts of the lower and eastern provinces.

7. His experiments have been an entire failure hitherto, as far as attempting to grow foreign cotton seeds; and to distribute them; and to introduce improved methods of cultivating them amongst the natives; and it appears to me that without such measures be not only tried by one or two years' experiments, but continued for some years, nothing will be known as to the capability of this part of India to raise cotton fit for the English manufacturers.

8. In removing to Tezapore, Mr. Price will be equally able to obtain land costing nothing to the Government, as at Saikwah, and he will have the advantage of being much nearer Calcutta, which, as regards the importation of fresh foreign seed, will be of great importance, and he will be able to obtain labour at a cheaper rate.

As for the distance from a seaport, I do not think that would be of any great consequence in any part of Assam with such a river as the Burhampootur; the downward freight would be of little importance could it be shown that the province could grow cottons fit for the English market at cheap rates.

9. Should the Board and Government be pleased to continue the experimental culture of cotton under Mr. Price, at Tezapore, I should be inclined to recommend that he be allowed to cultivate from 300 to 500 acres, with native and the most likely foreign cottons, and that the trial should be continued for five or six years, the cotton grown at his farm being prepared under his superintendence for exportation in the most careful manner, and the surplus seed

* No. 86, dated 11 July 1851, and its enclosures from Government.

seed being distributed to two or three collectors, to be partly cultivated by them, as suggested by Captain Dalton, in his fifth paragraph, under the instructions and occasional inspections of Mr. Price, and the rest to be distributed to such natives as would undertake to cultivate them with some care and under the methods suggested by Mr. Price.

10. In the full persuasion that the limited and partial experiment hitherto made by Mr. Price would not, if continued, lead to any satisfactory results, should the Most Noble the Governor not be prepared to allow of their being undertaken on a larger and more comprehensive scale, and under the immediate control and responsibility of the local collectors, I would not recommend their continuance.

I have, &c.
(signed) *F. Jenkins*, Commissioner of Revenue.

(No. 107.)

From Captain *E. T. Dalton*, Collector of Zillah^s Luckimpore, to the Commissioner of Revenue, Assam, dated Dibrooghur, 7 April 1852.

Sir,

WITH reference to your letter, No. 164, of the 29th ultimo, I have the honour to re-submit Mr. Price's report (No. 5, of the 7th February last), on the result of his experiments in cotton cultivation at Saikwah, upon which my own opinion is required.

2. Mr. Price, on coming up here, appears to have very soon decided upon Saikwah as the site for his experiments; the ground he selected there for his farm is an alluvial deposit of the Brahmapootur, and considering that to obtain such a soil he need not have gone so far, I am not aware what advantages could have been expected which induced him to commence his experiments in a part of the country so remote, and where labour is so scarce and so dear. Doubtless the good quality of the Muttuck indigenous cotton led to this part of Assam being selected, but though I am aware that very good cotton is raised by the Meerees on alluvial flats near the Brahmapootur, I believe the greater portion of what is exported as Muttuck cotton is grown on the undulating uplands of that country, the soil of which is very different; reddish, but not a stiff red clay, being light and friable. For experiments on a soil of this nature there are perhaps as good positions to be found in the vicinity of Dibrooghur as elsewhere, but here labour, though procurable to a limited extent, is dearer than it is in Central Assam; and as the higher up the river the experiment is tried the greater the expense of exportation, as well as of growth and manufacture; and as the Superintendent, after examining the available tracts in the Tezpore district, is of opinion that the soil there is as well adapted for the cultivation as it is here, I am of opinion, if the experiment under Mr. Price's superintendence is to be continued at all, that it should be removed there.

In noticing the expense of this experiment hitherto, and comparing it with the results obtained, it is proper to observe that no advances having been sanctioned for the monthly expenses of the farm, Mr. Price worked for some time on his own responsibility, and from his own resources, and his operations were necessarily on a limited scale; but this is not now to be regretted, as had a large outlay been made, it would only be to have paid more to ascertain that Saikwah was not the place where the experiment should have been commenced.

From March 1851 to February 1852 the bills submitted by Mr. Price for the monthly expenses of the farm amount to *Rs.* 897. 6. 9., besides which he received for purchase of 100 maunds of cotton 275 rupees, and for cleaning the same *Rs.* 249. 12., making a total of *Rs.* 1,422. 6. 9., in addition to his own salary of 450 rupees per mensem, and the salary of an Assistant for the portion of the time; Mr. Price's pay from June 1850 to January 1852 amounts to 7,650 rupees, and the total sum drawn for the Assistant to *Rs.* 216. 10. 8., to which must be added 200 rupees paid for conveyance of implements for the farm, so the total expense has been *Rs.* 9,489. 1. 5. I have not yet received any intimation from Mr. Price in regard to the quantity of cotton raised, or how much he may eventually clean and transmit, nor have I heard the result of the examination by Calcutta brokers of the cotton already sent down, but the whole outturn will not, I apprehend, be of much moment; and, independent of this, the result obtained as regards Saikwah is as follows:—

That the soil is well adapted for the cultivation of cotton, but that labour is at present too scarce and dear to admit of its being cultivated there and prepared for the market with any chance of success or profit.

I consider this to be the case in regard to Saikwah, and I therefore recommend that the farm there be closed at once; and satisfied with the results obtained, I do not think it should be recommended in any part of Upper Assam.

At the same time, should the Government wish it, it will be very easy for the local officers to carry on the experiments as far as regards the fitness of soils in their respective districts at a small expense, and I shall be very happy to try it here. Mr. Price might re-open his farm at Tezpore as the position he now considers best adapted for the purpose, and the officers in charge of districts, and their detached Assistants, might superintend the raising of cotton, indigenous and exotic, in different localities, and send the raw cotton to Mr. Price's factory to be cleaned and forwarded with the joint produce of all the districts of Calcutta.

B
Bengal and
North Western
Provinces.

I beg to annex herewith copy of a paper on the experimental cotton cultivation submitted to Captain Vetch, with a letter, No. 4, of the 23d January 1851, as there is nothing in the office to show that a copy of this document was previously laid before you, and the remarks appear to bear well on the results obtained and reported on by Mr. Price in the accompanying letter.

I have, &c.
(signed) E. F. Dalton, Collector.

(No. 5.)

From J. O. Price, Esq., Superintendent of Government Cultivation, Assam, to Captain E. F. Dalton, Collector of Luckimpore, Saikwah, 7 February 1852.

Sir,

I HAVE the honour of informing you, for the information of Government, that I have been employed for some time past in examining other parts of Assam, for the purpose of obtaining the information required by Government respecting labourers being procurable, and at what cost, &c., which I was prevented from doing on the receipt of the instructions I received through Captain Vetch to that effect in August last, by the state of my Assistant's health obliging him to leave the district, and by my not being able to procure another person to fill his appointment; I was obliged to remain on the farm until the month of December, by which time I was enabled to judge of the result of the present experiment, which was very promising, as far as respects the indigenous kind of cotton, up to the 1st of October, during which month the heavy rains we had were most injurious to it, so much so that nearly all the forms of flowers on the early planted part of the farm were destroyed, but the late planted field in a great measure escaped, and yielded a fair crop for the quantity of land. The Meeree tribe, who are the principal growers of the Derah kupas in this neighbourhood, I am sorry to add, have been severe sufferers; they inform me that they have not picked one-fifth the quantity they did in the previous years off the same quantity of land, and from what we have suffered here I believe they do not much over-rate their loss.

2. On the 20th of December I proceeded down the Brahmapootur to the Dikho, on which stream I first commenced my inquiries, being aware that labourers were not procurable to any extent further up the valley; and there only, I found, by bringing coolies up from Duriung and Nowgong districts at Rs. 3. 8. per month; the soil in this stream, as far as I had an opportunity of examining it, appears generally of too stiff a nature for cotton cultivation; from thence to the Dhunseeree River I next proceeded, where I found labourers would be more easily procured, and at three rupees per month. On this stream there is a variety of soil, some of which is well suited for the growth of cotton. I next proceeded to Tezpore, where I found labourers not only easily procured, but also at a very cheap rate, from Rs. 2. 8. to Rs. 2. 12., being the usual price of able coolies per month, so much so that Captain Reynolds kindly authorised me to state that, if the cotton experiment was tried in that part of Assam, he would supply Government with whatever number of coolies might be required. I had an opportunity also of examining well the lands in that neighbourhood through the kindness of that gentleman allowing me the use of his elephants for that purpose, by which I am enabled to state that I have not seen finer alluvial lands in any part of Assam than what is in that district; I am therefore encouraged to hope, that if Government continues the experiment, that it may be induced to remove it to that part of the country, where such advantages are available, and more particularly so as I am now fully convinced that it is useless to expect cotton cultivation to succeed here to any useful extent for some years yet, or at least until labourers are more plentiful in Upper Assam; in fact, the expense of cleaning cotton by the kirkee here at once prevents the kupas of this part of Assam from ever entering the market in any other state than in an uncleaned one, but by removing the experiment to Central Assam, one-half at least of that expense would be saved; besides, I cannot see anything to hinder the Dherah kupas from succeeding as well at Tezpore as here, if proper seed was introduced there.

3. With respect to the information required regarding the cost that Dherah cotton could be produced at in Assam, with reference to the small experiment we have tried here, I beg leave to inform Government, that from the unfavourable season last year proved,—and only having cultivated here one year,—I am unable to answer that question with any certainty, as the expense of clearing off woodland and preparing the land afterwards for seed, would at least cultivate the same land for the following three years, the crops of which would have to account in some measure for the heavy expense incurred the first year; but I should think, with fair seasons, after the land was once cleared, it might be produced for Rs. 2. 8. per maund, which, with anything approaching to effective machinery to clean it with, would bring it into the market at a cheap rate, say from 10 to 12 rupees per maund, as the quantity of wool to that of seed is much in its favour.

4. I regret much that I am unable to report more favourably of the result, so far, of the exotic seed we have received; but the reasons are obvious, namely, that of the first seed we received having lost nearly all its germinating qualities when it reached us, so that only a few sickly plants came up, and never yielded anything; and the other seeds that were received in October and November were quite too late for this climate; still I planted a part of them in hopes the winter might prove mild, and to see if the exotic kinds could stand the old

cold of this climate. Most of the seed vegetated well, but the extremely cold nights of January scarcely left life in any of it; so that I am afraid we are too near the snowy hills for that kind to succeed well, at least with late planting; I am therefore led to believe that either Central or Lower Assam would suit the cultivation of exotic cotton better than this part of the province.

I.
Bengal and
North Western
Provinces.

I have, &c.
(signed) *J. O. Price*,
Superintendent of Government Cotton Cultivation, Assam.

REMARKS respecting the Circumstances of greatest importance, in connexion with the Experimental Cotton Cultivation.

THE land in this district is much better suited for the cultivation of cotton than any that I have previously examined in India.

2. The climate I also consider favourable, were it not for the extreme coldness of the night during the winter season, which, render the seasonable showers and the humidity of the climate, unavailable for cotton cultivation during that season of the year.

3. Wages for labour very high, and only to be got at particular seasons of the year.

4. Labour not procurable at the seasons when we would most require it; in this respect either Lower or Central Assam would be better suited for an experiment of this kind.

5. The great distance that this place is from Calcutta will naturally occasion the carriage to be expensive in this respect. The nearer the experiment could be tried to Gowhatty the better, on account of steam communication.

6. The want of efficient machinery to clean the native cotton with is, in my opinion, the principal preventive to the country's supplying England with cotton at as cheap a rate as America possibly can, and I trust we may soon hope to see that want remedied.

7. The cotton of this district would, if fairly tried, be better suited for the home market than any that I have seen in Bengal; but the present system adopted by the natives here would ruin any cotton, both in strength and appearance.

8. With regard to our procuring a sufficient quantity of cotton, which must be very considerable to be of any use to the English market, the experiment, in my opinion, should be situated where a depôt for receiving and purchasing cotton could be most advantageously established, and at which place efficient machinery, both for ginning and pressing cotton, could be erected; which leads me to think that the experiment should be situated lower down in Assam, as there is very little cotton grown above this place, at least for sale, nor can we expect cotton to be brought up the river; but, on the contrary, if the experiment was established lower down the stream, the latter description of cotton could be easily purchased in this part of Assam and elsewhere, and floated down the stream to where the farm was, and there prepared for the home market; by which means only, I think, a large enough quantity could be procured. Besides, if situated where there was any number of ryots, the cultivation could be increased by ryottee cultivation, and introducing the seed from this part of Assam down there, which no doubt will grow well in any part of Assam.

(signed) *J. O. Price*.

(No. 188 of 1852.)

From the Commissioner of Revenue, Assam, to Captain *E. T. Dalton*, Collector, Luckimpore, dated Gowhatty, 13 April 1852.

Sir,

WITH reference to your letter, No. 107, of the 7th instant, forwarding your remarks on Mr. Price's report of the 7th of February last, as both Mr. Price and yourself consider the experiment at Saikwah to be in great measure a failure, and advise a removal to Tezpore, I beg to request you will direct Mr. Price to take early measures for closing his cultivation at the former, and removing down to the latter place.

2. Should Mr. Price have any crop on the ground, you will be so good as to give instructions to some local officer to take charge of the farm, and place at his disposal the necessary means for cleaning and gathering the crop, under the directions which Mr. Price will be good enough to give him; so that the cotton and seed may be saved, the former for transmission to the Board, and the latter to be distributed in such manner as you may think most advantageous.

I.
Bengal and
North Western
Provinces.

3. Mr. Price, as soon as possible, should remove with all his instruments and machinery to Tezpoore, and place himself in communication with Captain Reynolds, for the purpose of selecting an eligible spot for further experiments, subject to the orders of the Board and Government.

I have, &c.
(signed) *F. Jenkins*,
Commissioner of Revenue.

Board of Revenue, Lower Provinces,
Fort William, 11 May 1852.

(True copies.)

(signed) *C. H. Lushington*, Secretary.

(True copies.)

(signed) *J. W. Dalrymple*,
Under Secretary to the Government of Bengal.

No. 6. - (No. 226.)

From the Secretary to the Board of Revenue, Lower Provinces, to *J. P. Grant*, Esq., Secretary to the Government of Bengal, Revenue Department; dated Fort William, 15 June 1852.

Sir,

Land Revenue. IN continuation of my letter, No. 182, dated the 11th ultimo, I am directed by the Board
E. M. Gordon and of Revenue to submit herewith a copy of a letter from the Commissioner of Assam, dated
H. Ricketts, Esqrs. the 18th ultimo, No. 109, and its enclosures, relative to Mr. Price's proceedings in connexion with the experimental cotton farm at Saikwah, and to state that the Board find nothing in this correspondence to induce them to recommend any further outlay on the experiment.

2. The Board solicit early orders in their letter above referred to, the Commissioner having reported the arrival of Mr. Price at Tezpoore, whither he has proceeded, under instructions from the Commissioner, for the purpose of selecting a site for a new farm.

I have, &c.
(signed) *C. H. Lushington*, Secretary.

(No. 109.)

From Lieutenant-colonel *F. Jenkins*, Commissioner of Revenue, Assam, to the Board of Revenue, Lower Provinces, Fort William, Gowhatty, dated 18th May 1852.

Gentlemen,

WITH reference to my letter, No. 76, dated 13th ultimo, I have the honour to transmit a copy of a further letter, No. 129, dated 13th ultimo, from the Collector of Luckimpore, and its enclosures, from Mr. Price, relative to his proceedings connected with the experimental cotton farm from its commencement.

2. I beg to call attention to the detailed reports now presented by Mr. Price, and the remarks of the Collector, Captain Dalton, on the result of the Superintendent's operations.

These, I think, confirm the propriety of the removal of the experimental farm from Saikwah, though there is, I think, little reason for supposing that under more favourable circumstances, and especially in a drier season, the soils and climate of Muttuck would be found unsuitable for the growth of exotic cotton.

It might be the case that the introduction of them might require some years to acclimatise the plant, and it might at best be inferior to the best qualities grown in America, but still the probability is, that the country which is found to produce a superior indigenous cotton would be capable of yielding a far superior article than that native cotton, with a trial of selected seeds, and the substitution of the modes of culture under European skill and science to the very rude farming of eastern Assam.

3. It appears that Mr. Price has in hand, which will be shortly forwarded to the Board, 45 maunds of the native Dhera cotton, grown on the Government plantation, which he hopes will be found superior to that already transmitted to the Board, and which, as before stated, was bought of the natives from their own crops.

In my letter of the 19th April, No. 83.

4. Mr. Price has laboured under considerable difficulties, and I do not consider that the result of his experience in Upper Assam is at all conclusive of the aptitude of the country for cotton cultivation; and I would therefore again beg to recommend that the Collector, Captain Dalton, be allowed to continue a small experimental cultivation under his own immediate superintendence in the vicinity of Dibrooghur, under advice from and in consultation with Mr. Price.

With

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 241

With regard to this gentleman's further employment, I have again to request the orders of the Board and Government, reminding the Board of my former recommendation that experimental cultivation of cotton must be undertaken on a much larger and more liberal scale, or else, to the best of my judgment, the result will be altogether unsatisfactory, and deceptive to those who are concerned in the great question whether India can produce cotton fit for the English manufactories.

I have, &c.
(signed) *F. Jenkins*,
Commissioner of Revenue.

I.
Bengal and
North Western
Provinces.

(No. 129.)

From Captain *E. T. Dalton*, Collector of Luckimpore, to Colonel *F. Jenkins*, Commissioner of Revenue, Assam; dated Dibröoghur, 30 April 1852.

Sir,

I HAVE the honour to return Mr. Price's general report on his proceedings from the commencement of the experimental cotton farm in this district, sent to me for my opinion, with your letter, No. 175, of the 7th instant.

2. I have, since the receipt of this document, communicated with Mr. Price in regard to some points upon which information appeared to me to be required, and I beg to submit, as an appendix to his report, a copy of his reply.

3. My own opinion on the experiment, derived from such knowledge of Mr. Price's sentiments and proceedings as I then possessed, I had the honour of submitting to you, in a letter, No. 107, of the 7th instant; and though Mr. Price's views are now before me at greater length, I have little to add to what I have already expressed.

4. It appears that Mr. Price was led to select Saikwa as the best site for opening his farm, from the estimation that the Dhera cotton, the best of the indigenous sorts grown there or in that vicinity, was held in by the native traders of this part of Assam who purchased for exportation.

5. Mr. Price commenced operations in the month of March 1851, and by the 1st June had cleaned about 70 beegahs of land. He was engaged till the 31st August in sowing a portion of this with foreign seed, but, owing apparently to the badness of the seed, without success. He therefore turned his attention to the cultivation of the best kind of indigenous cotton, the Dhera, and planted at different periods (from 20th June to 15th August) about 50 pooras, adopting the native mode of cultivation. This crop promised well till October, in which month that first planted, and then in flower, suffered greatly from the heavy rains, but that sown later produced well, and from it Mr. Price has collected 45 maunds of cotton, which he has on hand. This cotton he has been careful in gathering, and he purposes preparing it himself, that its qualities may be properly tasted.

6. If the experiment results in bringing to notice as a superior kind of indigenous cotton the description called Dherra, it will not have been fruitless; sufficient has perhaps been done to point out to capitalists with what prospect of success its more extended cultivation in this part of Assam might be attempted; or if any further information on the subject be required by the Government, it can easily be collected and furnished by their own officers, without incurring further expense in experiments.

7. In regard to exotic cottons, Mr. Price is of opinion that the climate is too damp for the successful cultivation of those he has had opportunities of trying, but I am now, from all that is before me, far from thinking that the exotic kinds had a fair trial. Mr. Price, in his letter, No. 21, of the 26th instant, to my address, para. 5, admits that the rich soil in Muttuck is likely to be the best adapted to the foreign kinds; but that soil, it will be observed, has not been tried. Owing, he says, to the difficulties in procuring funds, Mr. Price could not commence operations soon enough to enable him to make any experiments on the lands in the vicinity of Dum Duma, which he had visited, and selected as a good locality for farming operations on a secondary soil, in conjunction with his operation on the alluvium at Saikwa. I think it is to be regretted that these lands were not tried, but as Mr. Price is of opinion that Tezporé is a better locality for further experiments, I have not, on this account, recommended their continuance under his superintendence in this district; but I earnestly beg attention to the proposal contained in the concluding portion of my letter of the 7th instant, for the continuation of experiments in the cultivation of exotic cotton under my own superintendence, or that of my assistants, sending the produce uncleaned to be prepared for the market by Mr. Price on his experimental farm at Tezporé.

8. Of course, if sufficient be known of the climate to pronounce it unfavourable to the growth of foreign cotton, it is useless trying it on another soil; but I do not think that the experience of one season is sufficient to pronounce authoritatively on this subject, and Mr. Price has himself declared that the only season he has known here was considered by the native cultivators of cotton to be a peculiarly unfavourable one.

9. Therefore, whilst I recommend that the head-quarters of the experiment be removed to a locality where labour is cheaper and more plentiful, climate somewhat milder and land

I.
Bengal and
North Western
Provinces.

as abundant as it is here, I hope I may be allowed the means of continuing experiments on a small and inexpensive scale here; and if I am provided with seed, and foreign cotton will grow in Muttuck, it is possible I may be able to introduce it generally amongst the native cultivators, though, like all illiterate agriculturists, they are peculiarly averse to innovation.

I have, &c.

(signed) E. T. Dalton, Collector.

(No. 18.)

From J. O. Price, Esq., Superintendent of Government Cotton Cultivation, to Lieutenant Colonel F. Jenkins, Commissioner of Assam; dated Suikwah, 30th March 1852.

Sir,

I HAVE the honour to submit to you, for the information of Government, a report of my proceedings from the commencement of the experimental farm in this district.

2. In the first place, I beg leave to acquaint Government with the system of cultivation that it is necessary to pursue here, so as to grow cotton to advantage, on account of the state of the country and the climate. No cleared land being available here suited for the growth of cotton, it is necessary to commence clearing of wood land as early in the month of January as possible, so as to get as much land as is required cleared and burned off by the 1st of March early, in which month a crop of dhan* (called doomahhere,) is planted, which not only helps to repay the expense of clearing the land, but also keeps it clear of weeds until the month of June, when the dhan crop is reaped, and dherah kupas seed planted on the land during that and the following month; this system, I regret to add, we are not enabled to take advantage of on account of not having funds available at a proper season to do so, occasioned by the Commissioner of Assam not having been empowered to sanction the necessary advances when required, as I had hoped would have been the case.

3. The month of March having commenced, and not having received any advances for cultivation, I considered I would be best serving Government (as the season was as far advanced) by making some advances to commence operations with until we could receive funds from Government for that purpose; with which view I engaged as many coolies as I could procure, and employed them from that time until the 1st of June in felling wood land, and in clearing and burning it off when the weather would admit of their being employed in that way, and when otherwise in getting posts and bamboos, and thatching grass, &c., for the purpose of erecting a small bungalow for my own use, and such other houses as we required for my Assistant's use and otherwise; but the frequent rains retarded our work greatly, and occasioned the clearing off the wood land and jungle to be both tedious and expensive, otherwise I was in expectation of having had a hundred beegahs cleared off, instead of which I could not get more than 70, on account of the great expense and difficulty we had in getting coolies.

4. From the 1st of June until the 31st of August the coolies were employed as follows: early in June I commenced koobing land, and preparing it for exotic cotton seed that I brought up from Dacca with me, although on examining the seed I found it had suffered much from having been so long in this damp climate; still I was in hopes that by planting it thickly that I might get a sufficient number of plants to procure seed from, but in this I was disappointed, as only a few seeds out of all that I planted vegetated, and from the weakness of the plants have never yielded anything; but soon afterwards I received a number of tin boxes of American seed from the Agricultural Society, which I hoped would have been better; but on opening the boxes the seed appeared to be very old; still in hopes of getting seed from it, I planted the greater part of it, but with as little success as I had from the former sowings. I therefore turned my attention entirely to the cultivation of the best kind of indigenous cotton that we have here, and continued preparing the land and planting the dherah kupas seed at different periods from the 20th June till 15th of August, for the purpose of seeing how early and late it might be safely planted in case of a large crop being required, all of which vegetated well; but unfortunately I was only able to plant 50 beegahs out of the 70 that I had cleared on account of the state of starvation that the coolies and natives in general were suffering from at that time from a want of rice in this part of the country, so much so that it frequently was not procurable at any price; and when a small native boat did arrive with rice, it was sold at so high a rate that a cooly's pay would not supply him and his family with one-half the food they required; the consequence of which was, that they were obliged to employ the greater part of their time in searching for wild yams in the jungle, and collecting any wild herbs that they could use as a sag; indeed such was the state of hunger that they were suffering from, that though often willing to go to work, they were unable to do so, and in this manner the planting season passed away, for which we had no remedy:

5. During the following three months, September, October, and November, the work was very light, as it was then too late for planting, so that the few coolies that had returned to work were engaged in weeding and thinning the young plants out, which is particularly required with dherah kupas, as it is sown broadcast, and not planted in rows or steps like other

* Rice cultivation.

other cotton. The appearance of the cotton field was very promising until about the 13th of October, from which time the intense rains we had that month were very injurious to the early planted part of the field, *stripping it almost entirely of the young forms and flowers with which it was covered at that time*; but the later planted part did not suffer much, as it did not commence flowering until about the time that the rain ceased; it therefore continued growing and improving much during the month of November, which was very seasonable. During this month I prepared some land, and planted a part of the exotic seed that I had lately received of two kinds, one a black, smooth-skinned kind, resembling Sea Island seed, and the other American, the former of which vegetated uncommonly well, but the latter only partially.

6. The coolies were principally employed during the months of December and January in picking cotton, which I was particular in having taken from the trees without allowing to be exposed to the weather, in hopes of getting a stronger fibre with it than with that which was bought from the natives and cleared by me, as they are in the habit of exposing their cotton very much to the weather, so that they are enabled to pick all in at one time; to effect which the early bolls are allowed to fall off the tree, and remain so until the late bolls are fit for gathering, so that the early and best cotton must be much bleached and weakened in staple. I have now got about 45 maunds of cotton grown on the farm, which I would like to be carefully cleaned and forwarded for inspection, as I am in hopes its fibre will be found much stronger than that which was formerly sent. The exotic seed which I planted in November has suffered much from the coldness of the weather during the last two months, from the effects of which much of it has died away; but there are still some of it left, which is now recovering, and from which in due time some seed may be got if it is taken care of.

7. In concluding this report, I cannot refrain from expressing my regret that we should have had so many difficulties to contend with in the first year of the experiment in Assam, and particularly so that we should have been so fortunate with the exotic seed; although it is my opinion at present that the immense quantity of rain that falls here, and the intense coldness of the weather during the months of December and January, will prevent that description of cotton from ever succeeding well here; but, on the contrary, should the wool of the dherah kupas be found suitable for the English market, it can bear any quantity of rain up to the 1st October, after which it is most destructive to it, and from which we suffered so much last season; but it is to be hoped that such another October will not visit this part of the country for some years to come, otherwise the natives will stop planting dherah kupas, and grow cotton of an inferior kind, which is not so easily injured; but, unfortunately for us, we have not only the season to contend with, but the want of labour also, which is only procurable in a very limited extent at any time, which convinces me that Central Assam is altogether better suited for an experiment of this kind; and that for several reasons, such as labour plentiful and cheap, with equally fine cotton land, seasons more regular, and the saving of a long, dangerous, and expensive water carriage, which should be avoided as much as possible on account of the bulky description of produce that cotton consists of.

I have, &c.

(signed) J. O. Price,

Superintendent of Government Cotton Cultivation, Assam.

(No. 21.)

From J. O. Price, Esq., Superintendent of Government Cotton Cultivation, Assam; to Captain E. T. Dalton, Collector of Luckimpore; Saikwah, 26 April 1852.

Sir,

I HAVE the honour of being in receipt of your letter, No. 111, of the 20th instant, and the accompanying letter from the Commissioner of Assam, the instructions conveyed in which respecting my report shall be attended to.

2. In reply to the information that you required respecting the cotton that is in hand, I beg to inform you that it has not yet been cleaned, and that the principal obstacle to its being cleaned was the want of an advance to do so with, which I deferred applying for until I could get the former accounts adjusted.

3. Respecting the exotic seed that was planted in November, I am glad to inform you that the plants that withstood the cold weather are now looking healthy, but will not bear any cotton worth picking, I expect, before the dry season commences again, although it will likely give flower and bear some bolls previous to that time. I will leave particular directions for the management and care of it, as I agree in opinion with you, that it would be very desirable to get a little seed from it.

4. I am sorry to tell you, that I had not an opportunity of making any experiments on the lands in the vicinity of Dum Duma, from the lateness of the season before I could determine what was to be done, on account of the difficulty in getting funds to commence the experiment.

29b—Sess. 2.

H H 2

5. As

1.
Bengal and
North Western
Provinces.

5. As respects the soil best adapted for the cultivation of dhera kupas, it is my opinion that the alluvial land is the best suited for its growth, and as a proof of it, I find the cotton grown on the sandy alluvial soil about Saikwah is much preferred by the kyale to that grown on the higher lands in Muttuck. I look upon the rich soil in Muttuck as being better suited for the growth of exotic cotton, but it would require a favourable season for it to succeed well; we have had a great deal too much rain for the growth of it here, since I have been situated in Assam.

6. I had not tried any experiment with the dhera kupas here, as I found it to be an inferior cotton, and much mixed, although apparently a strong-fibred cotton, when not too much exposed to the climate before being picked from the shrub.

I have, &c.

(signed) *J. O. Price*,
Superintendent of Cotton Cultivation, Assam.

Board of Revenue, Lower Provinces,
Fort William, 15 June 1852.

(signed) *C. H. Lushington*, Secretary.

(True copy.)

(signed) *J. W. Dalrymple*,
Under Secretary to the Government of Bengal.

(No. 243.)

No. 7. From the Secretary to the Board of Revenue, Lower Provinces, to *C. Beadon*, Esquire, Officiating Secretary to the Government of Bengal, Revenue Department; dated Fort William, 2 July 1852.

Sir,

Land Revenue. *E. M. Gordon and H. Ricketts, Esqrs.* WITH reference to the second paragraph of my letter, No. 226, dated the 15th ultimo, I am directed by the Board of Revenue to submit, for the consideration and orders of the Most Noble the Governor of Bengal, copies of two letters from the Commissioner of Assam, Nos. 131 and 134, dated the 14th and 16th ultimo respectively, and their enclosures, the former soliciting sanction to the disbursement of Rs. 51. 4. 9. on account of expenses incurred in removing the Government farming implements from the cotton farm at Saikwah to Tezpoore, and the latter to an advance of 150 rupees made to Mr. Price, to enable him to commence the experimental cultivation of cotton at Tezpoore.

2. Should the services of Mr. Price be dispensed with, as recommended in my letter of the 11th May last, No. 182, the Board suggest that the collector might be directed to superintend the little plantation at Tezpoore for the year.

I have, &c.

(signed) *C. H. Lushington*, Secretary.

(No. 131.)

From Lieutenant-Colonel *F. Jenkins*, Commissioner of Revenue, Assam, to the Board of Revenue, Lower Provinces, Fort William; dated Gowhattee, 14 June 1852.

Gentlemen,

WITH reference to paragraph 3 of my letter, No. 76, dated 13th April last, I have the honour to transmit a bill* for Rs. 51. 4. 9. expended in the removal of the things attached to the cotton farm from Saikwah to Dibrooghur, and from thence to Tezpoore, and with reference to the expenditure being unavoidable, I beg to recommend that it be passed by the Board.

I have, &c.

(signed) *F. Jenkins*,
Commissioner of Revenue.

* In original, from Mr. Price, dated 4th instant.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 245

J.
Bengal and
North Western
Provinces.

The Honourable India Company, *Dr.*

To the following Expenses incurred in removing the Government Farming Implements, &c., from Saikwah to Tezpore, under the sanction of the Commissioner's Letter to Captain *E. T. Dalton*, Collector of Luckimpore, No. 188, dated 13 April 1852, viz.:

	<i>Rs. a p.</i>
May 7.	
To paid 12 dooms for conveying farming implements, cotton cleaning machines, and cotton from Saikwah to Dibrooghur, at one rupee each	- 12 - -
Ditto hire of boats, at four anas each	- - - - 1 8 -
May 22.	
To paid Moodoo Manjee for hire of his poncee boat for 24 days, employed in conveying the above-named articles from Dibrooghur to Tezpore, at the rate of 41 rupees per mensem	- - - - - 32 12 9
May 31.	
To paid Barrute Burkundaz, in charge of the above articles, his salary for the month of May	- - - - - 5 - -
TOTAL Company's Rupees	- - - 51 4 9

Tezpore, 4 June 1852.

(signed) *J. O. Price*,
Superintendent of Cotton Cultivation, Assam.

(No. 134.)

From Lieutenant Colonel *F. Jenkins*, Commissioner of Revenue, Assam, to the Board of Revenue, Lower Provinces, Fort William, dated Gowahatty, 16 June 1852.

Gentlemen,

WITH reference to my letter, No. 125, dated 7th instant, and its enclosures, respecting the sum* required for the cultivation of cotton on 40 poorahs of land in the division of Tezpore, under the superintendence of Mr. Price, I have the honour to transmit a further correspondence† regarding an advance of 150 rupees made to Mr. Price to commence the experiment: as this is the season for putting cotton seed in the ground: and, under the circumstances mentioned, I beg the Board will approve of the present advance, but I have this day directed the Collector of that division not to make any further advance till the orders are received to the Board's letter‡ respecting the continuance or otherwise of the experiment under Mr. Price's superintendence.

* 800 rupees.

I have, &c.
(signed) *F. Jenkins*,
Commissioner of Revenue.

(No. 67.)

From Captain *C. S. Reynolds*, Collector of Durrung, to Colonel *F. Jenkins*, Commissioner of Revenue, Assam, dated Tezpore, 27 May 1852.

Sir,

I HAVE the honour to submit a copy of a letter which I have just received from Mr. Price, Superintendent Government cotton cultivation in this province, with my reply, and solicit your sanction and approval of the advance which I have made him to enable him to commence operations at once, and thus prevent our losing another season, and the waste of the seed now in Mr. Price's possession.

Para. 2. At the same time I solicit your instructions regarding any further advances that Mr. Price may apply for, and generally respecting the experiment to be made in this district.

I have, &c.
(signed) *C. S. Reynolds*, Collector.

† From the Collector of Tezpore, No. 67, dated 27 May 1852. From Mr. Price to the Collector of Tezpore, No. 4, dated 26 May 1852. From Collector, Tezpore, to Mr. Price, No. 73, dated 27 May 1852.

‡ No. 182, dated 11 May 1852, from the Board to Government, a copy of which attached to Board's, No. 57, dated 18 May 1852.

I.
Bengal and
North Western
Provinces.

(No. 4.)

From *J. O. Price*, Esq., Superintendent of Government Cotton Cultivation, to Captain
C. S. Reynolds, Collector of Durrung, dated Tezporé, 26 May 1852.

Sir,

I BEG leave to inform you that the best season for planting cotton in Assam, as far as the experience I have had enables me to judge, is from the 1st of June to the 20th of July, and that season having now almost arrived, allow me the honour of suggesting to you the utility of our commencing operations at once in a limited way, say of 20 poorahs or thereabouts, 10 on the high original soil and the same quantity on the alluvial chur land, now beyond the reach of inundation, the former of which I would plant principally with the exotic seed that I have brought down with me, and the latter from the seed of the dherah kupas, that I also brought from Saikwah, without doing which we shall not only lose the seed on hand, but also a whole season, during which the result of the two small experiments above mentioned would enable us to judge, in a great measure, of our prospect of future success; I therefore hope you may be able to favour me with an advance of one hundred and fifty (150 rupees) for that purpose, so as to enable me to commence preparing the land for the seed at once.

I have, &c.
(signed) *J. O. Price*,
Superintendent of Government Cotton Cultivation.

(No. 73.)

From Captain *C. S. Reynolds*, Collector of Durrung, to *J. O. Price*, Esq., Superintendent of Government Cotton Cultivation, Tezporé; dated Tezporé, 27 May 1852.

Sir,

In reply to your letter, No. 4, of this date, suggesting the utility of commencing operations at once on a small scale, as the season has arrived for sowing cotton, and that you propose taking up about 20 poorahs of land, half of the high land, for the cultivation of the exotic cotton, and half on alluvial chur lands, above inundation, for the dherah cotton of Saikwah, I beg to observe that although I perfectly concur with you in the expediency of your commencing at once, I have not as yet received any orders from the Commissioner on the subject, and am therefore unable to inform you what his wishes are on the subject. However, as it appears from his letter to Captain Dalton, No. 183, of the 13th April 1852, that he has recommended to the Sudder Board that the experiment should be tried here, and as a whole season will be lost unless you are able to prepare the lands at once, I will take upon myself the responsibility of advancing the amount you require, and would suggest your sending me receipts in duplicate for the amount, when I will pay the money to whoever you may depute to receive it.

I have, &c.
(signed) *C. S. Reynolds*, Collector.

(True copies.)
(signed) *F. Jenkins*, Commissioner of Revenue.

Board of Revenue, Lower Provinces,
Fort William, 2 July 1852.

(True copies.)
(signed) *C. H. Lushington*, Secretary.

(True copies.)
(signed) *J. W. Dalrymple*,
Under Secretary to the Government of Bengal.

No. 8.

(No. 632.)

From *A. R. Young*, Esq., Under Secretary to the Government of India, to *J. W. Dalrymple*,
Esq., Under Secretary to the Government of Bengal.

Sir,

Home Dept.

I AM directed to acknowledge the receipt of your letter, No. 819, dated the 5th instant, and, in reply, to state that in the opinion of the Governor-general in Council there seems to be no justification or encouragement for continuing further the unsuccessful experiments for the production of cotton in Assam. His Lordship in Council does not hesitate therefore to authorise their being abandoned, and the services of Mr. Price, the Superintendent, dispensed with.

2. A communication on the subject will be made to the Honourable the Court of Directors by the next mail.

Council Chamber, 27 August 1852.

I have, &c.
(signed) *A. R. Young*,
Under Secretary to the Government
of India.

(No. 67.)

Fort William, Foreign Department, 4 August 1854.

To the Honourable the Court of Directors of the East India Company.

Honourable Sirs,

DURING the commencement of the year we sanctioned the deputation of Mr. J. O. Price, who had been engaged some years ago in inquiring into the capabilities of the province of Dacca, and that of Assam for cotton cultivation, to Pegu, to report upon its capacities for growing cotton. We have now the honour to transmit, for your information, copies of letters from the Commissioner of Pegu, forwarding Mr. Price's reports on the cotton lands in Pegu, together with copies of the minutes recorded, and of the letter written to the Commissioner of Pegu on the subject.

We have, &c.
(signed) *Dalhousie.*
J. Dorin.
J. Low.
J. P. Grant.

Fort William,
4 August 1854.

(No. 2.)

From Captain *A. P. Phayre*, Commissioner of Pegu, and Agent to the Governor-General, to the Secretary to the Government of India, Foreign Department.

Sir,

I HAVE the honour to submit for the information of the Most Noble the Governor-general in Council, copy of letter to my address, No. 9, dated the 12th ultimo, from Mr. J. O. Price, on the cotton cultivation of Pegu. This letter unfortunately having been detained at Rangoon, only reached me on the 3d instant.

Revenue.

2. Mr. Price has now inspected the principal cotton lands situated in the valley of the Irrawaddy, within the districts of Henzada and Prome, and he has supplied all the information which it is likely he can obtain at present. The result amounts to this: First, that the indigenous cotton of Pegu is of good quality; Second, that in past times it has been produced in very considerable quantities; Third, that the Prome district contains an extensive area of fine cotton land.

3. The practical benefit to be derived from Mr. Price's inquiries appears to be, that it will be very desirable to foster the cotton cultivation by endeavouring to incline the people again to take up those lands which the disturbed state of the country has caused them to abandon. The best and most obvious method for doing this is to put a low rate of assessment on cotton lands for a few years, and this I request sanction to do.

4. I also purpose distributing some foreign cotton seed; I did distribute some last year, which I see Mr. Price met with at Henzada.

5. As I do not consider that Mr. Price's further employment is required in Pegu, inasmuch as he has furnished the information which was desired, and his inquiries up the Sitang River could not be made advantageously at the present season, I have directed him to return to Rangoon, with a view to his embarking for Bengal.

Pegu, Commissioner's Office,
Bassein,
9 June 1854.

I have, &c.
(signed) *A. P. Phayre*,
Commissioner of Pegu,
and Agent to the Governor-General.

(No. 9.)

From the Superintendent, Government Cotton Cultivation, to Captain *A. P. Phayre*, Commissioner of Pegu.

Sir,

I HAVE the honour to submit to you, for the information of the Most Noble the Governor-general in Council, a report of my proceedings up to the present date, in the examination of the soil of the province of Pegu with respect to its capabilities for growing cotton.

Having arrived at Rangoon on the 13th February, and perfectly satisfied myself that the Delta, or low lands in that part of the country were quite unsuited for the growth of cotton,

I.
Bengal and
North Western
Provinces.

cotton, and particularly that of the exotic kinds, I thought it advisable to proceed at once to Prome, where I was aware the climate was of a much drier nature, and in which district I was informed, by the best information I could procure, that cotton had been, previous to the late war, the general crop of that country, and that to a very large extent. On my arrival there I was detained for a short time by the difficulty found in procuring an interpreter, on which being obtained, I proceeded to examine the land on the left bank of the Irrawaddy, from opposite Prome up to Thayet Mew, in the interior of which district I found in the detached localities some very fine cotton land, which gave evident proofs of having been nearly all formerly in cotton cultivation, so much so that self-sown cotton is growing wild through the jungle that has sprung up since the disturbed state of the country; indeed agriculture in general has been so neglected for the last two years, that many of the inhabitants have deserted their villages altogether, principally from the dread of being attacked by the gangs of decoits that are in the country. The natives say themselves they only want protection and a near market to enable them to grow double the quantity of cotton ever grown in this country; very little cotton has been grown last year, and the consequence is that it is 15 rupees per 100 viss, that formerly sold at from 4 to 6 rupees for that quantity; the present price is equal to Rs. 3. 6. per maund; but it is the opinion of the natives that in a year or two it will become as cheap as ever it was, if encouraged by Government to grow it. It will be seen from the prices I have above stated that cotton was formerly sold here for less than half the price of Bengal cotton, although superior in quality; indeed, with exception of the dherah kupas of Assam, this is the best indigenous cotton I have seen in India, and care in picking it would improve it much in strength and colour.

3. I next proceeded to examine the land on the right bank of the river to the interior of Prome, where I examined a large tract of country, almost all of which I found to consist of superb cotton land, in fact I may safely state that a finer cotton district I have never seen, and of such an extent that I saw no limit to the quantity of land procurable, and the natives say that the same dark rich soil continues for an immense extent, unless when intercepted with low hills, which are generally of a gravelly nature. I regretted much that I was unable to go further into the country, and into Upper Tharawaddy, on account of only having four Burmah coolies as an escort, and the disturbed state of the latter place rendering it unsafe for me to do so. I regret that I am unable to speak from personal experience of the climate, but everything that I have heard respecting it gives me reason to hope that it will prove as favourable for the growth of exotic cotton as it is at present for indigenous kinds, the rains being represented to me to consist of heavy showers occasionally, instead of the deluges of rain that Bengal and many parts of this province are subject to. I wish much we had 10 or 20 seers of exotic seed to try a few beegahs of land in this district, which would answer all the purpose of ten times the quantity in trying the climate. It should be planted in June, and perhaps a small quantity of seed could be got from the Agricultural Society, and received here in all that month, should his Excellency the Governor-general think it desirable to have more authentic proofs of the climate being suited for the growth of foreign cotton.

4. Having perfectly satisfied myself with respect to the valuable qualities of the district of Prome, I next turned my attention to the district of Sarrawah, at which place I now am, after having examined some of the localities in it, reported to me to be most favourable for cotton cultivation, but I have found the land in general all too low for exotic cotton, very little of it being free from inundation, excepting the high grounds on which the villages are placed; besides, I am informed, it is subject to an immense quantity of rain during the wet season; the indigenous cotton planted here is sown broadcast on the chur land immediately after the inundation recedes, and is picked before the next rains, and this is done to a very limited extent; in fact, the natives, wherever I inquire after cotton, point out Prome and Upper Tharawaddy as the great cotton-growing districts. This district is well suited for the growth of indigo, from the nature of the land, and the great advantage that this province possesses, from the late season in the year that the inundation takes place rendering loss of crop on the ground almost impossible, which is too often the case in Bengal; it is also a very rich rice country. I had been informed that a little Sea Island cotton seed had been supplied to some natives, but on visiting their villages they informed me that the seed they had planted had not germinated, and some of them have kept theirs to plant in the rains; I instructed them how to do so, but the seed which I examined is too old, I am afraid, to vegetate; still a few of the seed may grow.

5. I regret that either from the ignorance, or some other secret motives of the natives in the different districts that I have visited, I have been unable to obtain anything like authentic information from them respecting the quantity of cotton formerly grown in any one district, or the quantity of land formerly in cultivation in any particular part of the country. They all agree that the quantity of cotton was something immense, but they cannot name any particular quantity; but this is to be less regretted, as we are aware of the quantity having been really very great, and of there being more fine cotton land in the country than will be cultivated for many, many years to come; besides, I am informed by parties who are acquainted with the lands on the Sitang River, that there is any quantity of very rich soil there, with a climate in some places much the same as that of Prome; but the season, I am afraid, is too far advanced to be able to examine in that part of the province at present.

I have

I have been much astonished to find the mode of agriculture in so old a country as this in so rude a state, indeed nothing could be more so in cultivating cotton; they neither use plough, hoe, nor spade, but merely ruffle the surface of the soil with a coarse-made chisel or a piece of wood; and with the cotton seed they plant rice or some other mixed crop from the land, after all the labour of felling the wood and clearing the land, although the land is for many feet down the same free, dark, rich soil; but this is not the case with those who plant rice only; their lands being quite level they allow water to settle on the land as the ryots do in Bengal, and when it becomes perfectly soft they use a sort of a rude harrow to turn the surface of the soil up with, so as to enable them to sow yearly on the same land, and I am told, to reap most abundant crops, such is the richness of the soil of this province.

I.
Bengal and
North Western
Provinces.

I have, &c.
(signed) *J. O. Price*,
Superintendent Government Cotton Cultivation.

Henzada, 12 May 1854.

(True copy.)
(signed) *A. P. Phayre*,
Commissioner of Pegu, and Agent to the Governor-General.

(No. 4.)

From Captain *A. P. Phayre*, Commissioner of Pegu, and Agent to the Governor-General, to the Secretary to the Government of India, Foreign Department, Fort William.

Sir,
I HAVE the honour to submit, for the information of the Most Noble the Governor-general in Council, copy of letter, to my address, No. 13, dated 5th instant, from Mr. J. O. Price, containing his further report regarding cotton cultivation in the district of Sarawah (Henzada).

Revenue.

Pegu Commissioner's Office, Rangoon,
22 June 1854.

I have, &c.
(signed) *A. P. Phayre*,
Commissioner of Pegu, and Agent to
the Governor-General.

(No. 13.)

From the Superintendent of Government Cotton Cultivation, Pegu, to Captain *A. P. Phayre*, Commissioner of Pegu, and Agent to the Governor-General.

Sir,
I HAVE the honour to report to you the result of my examination of the soil of this district, as far as practicable at present. As Upper Tharawaddy still continues in too disturbed a state to admit of my visiting that part of the country at present, and in the southern part of the district, where indigenous cotton is grown to a small extent, after the inundation has receded, no opinion can be formed of the soil at the present time. As the parties who grow the cotton must depend much on the deposit left on the land after the water has retired, the dry season, when the crop is on the ground, will be the proper time of judging of the likelihood of their being able to grow that sort of cotton extensively; they say themselves that it is a more profitable crop than rice, and therefore the greater inducement for them to increase their cultivation if they have lands suited for it.

2. On my arriving here from Prome, and having got as much information from Mr. Dangerfield and others as possible of this part of the country, I proceeded on the 5th for the neighbourhood of Okphoh, and visited on my way the following villages: Zumbeyow, Emajou, Tengainween, Pacon, and Leoo; on the 6th, Moyea, Tullucktau, Wagee, Zelongmew, and Okphoh; on the 7th, Kangoon and Kveengoon, at both of which places exotic cotton seed had been given to the natives, but on inquiry they told me it never vegetated, but from what cause they could not say, and not finding any cultivated land further than Kangoon I returned to Okphah, and on the two following days visited the following several villages:—8th. Ine, Kama, Mujegon, Kenzee, Lambaugoon, and Dambee; and on the 9th, Kepee, Choutong, and Ladeguin. All the lands that I examined on this trip are very fine, but nearly all subject to inundation, and those that are not, so flat as to be nearly as bad during the heavy rains that the district is subject to, rendering both kinds very unfit for the cultivation of foreign cotton.

3. Having remained some days at Henzada, in hopes of having the honour of receiving a reply to my letter, asking for information where you wished me to proceed to on leaving the district, but not having received any, I left this place again on the 20th, and having procured a guide and carts I left for the interior on the 25th, and passed through the following villages: Subakoe, Contan, Reeyow, Keetee, Teekee, and Puda; and on the 26th, Kyengone, Paynagone, Kae, Tiepuquen, Logeque, Yamyaw, Piam, Ram, and Meayon; on the 27th, Tumgone, Meontagow, Taumingone, and Phegow, and returned to Myodoung.

I.
Bengal and
North Western
Provinces.

The rains having fairly set in I returned to this place on the 30th. The lands in the neighbourhood of Myodoung, and for about six miles back, are more or less subject to inundation, but from that distance it is a very fine part of the district, and generally free from the influence of the river; it consists of fine rich flats, surrounded by small gravelly hills; the soil would be free if fairly cultivated, and suited almost for any cultivation. The inhabitants informed me that they had never planted cotton, so that they would not easily take to it, I am afraid, at least I have found it so in Bengal, where this was the case, but several of them said they would willingly try a little of the exotic seed if it was given to them, but unfortunately we have not any; they say the rains are somewhat lighter there than here.

4. I have not been able to mention the distances of the villages from each other, or any particular place, as I had finished with the district of Prome, and a part of this one before I had the honour of receiving your letter, No. 158; and in my last trip I found it impossible to approach to anything near the truth, as the natives only give such information as answers their own purpose; I therefore had thought it better to leave that for your Assistant Commissioner when out visiting the different parts of the district, as he will have much better opportunities of getting true information from his native establishment than I could be expected to do, and particularly so from my only having an opportunity of passing once through any part of the district.

Henzada,
5 June 1854.

I have &c.
(signed) *J. O. Price*,
Superintendent of Government Cotton Cultivation,
Pegu.

(True copy.)
(signed) *A. P. Phayre*,
Commissioner of Pegu, and Agent to the Governor-General.

MINUTE by the Most Noble the Governor-General of India, concurred in by the Honourable Colonel *J. Low*, c. b.

Cotton in Pegu.

THE Commissioner of Pegu transmits a general report by Mr. Price, on the cotton lands in Pegu.

The examination has been confined to the western side of the province, and it has only been partial, for various reasons, which are stated.

The result seems to be that the lower districts of the province are wholly unsuited to the cultivation of cotton, though well adapted for the growth of indigo. The upper districts, however, including the northern portions of Tharawaddy, contain a soil and climate upon both sides of the river which seems to hold out a rich promise in regard to the supply of cotton, when the population shall have increased and cultivation shall have been improved.

It would be very desirable to send down some cotton seed to the Commissioner, which might still be tried this year, if it shall be sent by the next mail. It may, perhaps, be procured here.

This report should be forwarded to the Court of Directors.

30 June 1854.

(signed) *Dalhousie*.

I concur.

4 July 1854.

(signed) *J. Low*.

MINUTE by the Honourable *J. A. Dorin*; concurred in by the Honourable *J. P. Grant* and Honourable *B. Peacock*.

Cotton cultivation
in Pegu.

CAPTAIN PHAYRE asks leave to put a low rate of assessment on cotton lands for a few years, with a view to promote the cultivation of cotton, but I very much doubt the expediency of fostering its growth in this way.

If the cultivation is profitable, and will pay, it ought to do so without any special reduction of assessment; if it requires a concession of this nature to make it answer, no cotton can hardly be good enough to succeed at all.

I assume in this, that Captain Phayre proposes to assess his cotton land at a lower rate than other good land in the province and vicinity.

3 July 1854.

(signed) *J. A. Dorin*.

I concur as to the Commissioner's proposal to reduce the assessment of cotton land below the usual rate, with Mr. Dorin. If special encouragement from Government is needed, I should prefer giving it in the shape of a price for the cotton for a year or two; but from Mr. Price's account, I do not see why any special encouragement to cotton cultivators should be necessary. When the country is secured from plunderers, for which end all

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 251

all proper measures are now in progress, all cultivators will be encouraged; and as cotton can be purchased cheaply, whilst in ordinary times there is a large native demand for the article, I cannot doubt that the cotton cultivation will revive with the revival of all other branches of industry.

i.
Bengal and
North Western
Provinces.

(signed) J. P. Grant.

5 July 1854.

I concur.

6/7/1854.

(signed) B. Peacock.

(No. 3086.)

From G. F. Edmonstone, Esq., Secretary to the Government of India, to Captain A. P. Phayre, Commissioner of Pegu.

Sir,

I AM directed by the Governor-general in Council to acknowledge the receipt of your two Foreign Department despatches, dated respectively the 9th and 22d ultimo, Nos. 2 and 4, forwarding Mr. Price's reports on the cotton lands of Pegu; and, in reply, to communicate the following remarks and instructions.

2. It appears that Mr. Price's examination has been confined to the western side of the province, and that it has been only partial, for various reasons, which are stated.

3. The result seems to be that the lower districts of the province are wholly unsuited to the cultivation of cotton, though well adapted for the growth of indigo, while the upper districts, including the northern portions of Tharawaddy, have a soil and a climate upon both sides of the river which seems to hold out a rich promise in regard to the supply of cotton, when the population shall have increased, and cultivation shall have been improved.

4. His Lordship in Council, thinking it very desirable that a superior description of cotton should be introduced, and that, if possible, the experiment should be tried this season, a package containing a couple of bushels of seed of the South Sea Island cotton has been sent to your address. You are authorised to distribute this seed gratis, at your discretion, and are requested to report hereafter whether or not it has succeeded, and if not, what may have been the causes of failure, whether they are connected with the climate or the soil of the province, or with the imperfect and crude mode of cultivation.

5. With reference to the 3d paragraph of your letter, No. 2, dated 9th ultimo, I am desired to inform you that the Most Noble the Governor-general in Council entertains great doubts as to the expediency of assessing cotton lands at a lower rate than other lands of the same character, on which other crops may be grown. If the cultivation of cotton is remunerative, and if, as you state, it has been abandoned only in consequence of the disturbed state of the country, there seems no reason to doubt that the people will resume it of their own accord, and without any such special encouragement as you propose, whenever complete tranquillity shall have been secured. For this end all proper measures are now in progress, and as cotton can be produced cheaply, whilst in ordinary times there is a large native demand for the article, His Lordship in Council feels satisfied that the cotton cultivation will, without any special concession, revive with the revival of all other branches of industry.

6. But if any special encouragement should be needed, the Governor-general in Council would prefer giving it in the form of a fair price for the cotton, for a year or two. This, while it would secure the end in view equally well, would not interfere, as the measure proposed by you might do, with the principles which it may be found advisable hereafter to adopt in the assessment of the land revenue.

7. His Lordship in Council will be glad to receive a further report from you on this point, should you have any suggestions to offer.

I have, &c.
(signed) G. F. Edmonstone,
Secretary to the Government of India.

Fort William, 17 July 1854.

EXTRACT Foreign Letter from Bengal, dated 16th March (No. 20.) 1855.

With reference to our orders of July last,* relative to the reports on cotton lands in the province of Pegu, made by Mr. Price, the Commissioner repeated his desire to be permitted to assess cotton lands at a lower rate than lands of the same character bearing other crop, and he stated that he preferred this measure to that of encouraging the cultivation of cotton by guaranteeing a fair price for the

1854.
Cons. 25 August.
Nos. 129 and 130.
List, No. 111.
* Letter, No. 67,
of 1854.

296—Sess. 2.

I I 2

the

I,
Bengal and
North Western
Provinces.

the produce. The Commissioner was of opinion that the concession which he proposed would be received as it was intended, as an encouragement to cotton cultivation, and nothing else; and he apprehended that without some such measure, no decayed branch of industry would be revived, or new one introduced in a country in which agricultural industry has received so severe a shock as in Pegu, and which was so devoid of capital and enterprise. Whether these considerations were sufficient for departing from the "sound principle" (as the Commissioner himself acknowledged it to be) of the former orders, might be doubted, but Major Phayre stated one material fact which was not before us when those orders were passed, viz.: that, "under the Burmese government no tax whatever was put on cotton lands," which somewhat altered the complexion of the case.

266. The Commissioner requested orders relative to the further employment of Mr. Price in the province.

267. It was intimated to Major Phayre that either proposal of the two adverted to by him was open to objection, but that under the circumstances described by him as existing in the time of the Burmese rule, the fixing a lower assessment on cotton lands seemed to us the less objectionable, and with advertence to the great anxiety felt in England for every exertion being made in every quarter to increase the supply of cotton, we have sanctioned the adoption of the measure urged by the Commissioner, care being taken to show that it was not regarded as paramount.

268. The Commissioner was also informed that we did not further require the services of Mr. Price.

No. 129.

(No. 11.)

EXTRACT Fort William Foreign Consultation, dated 25 August 1854.

From Captain *A. P. Phayre*, Commissioner of Pegu, and Agent to the Governor-General, to *G. F. Edmonstone*, Esq., Secretary to the Government of India.

Sir,

Revenue.

I HAVE the honour to acknowledge the receipt of your letter, No. 3086, dated the 17th ultimo, relative to the reports on cotton lands, in the province of Pegu, made by Mr. Price.

2. I certainly think that in time the cotton cultivation in Pegu will recover itself without the stimulus which I proposed in the shape of a reduced rate of assessment on land cultivated with that crop. But when I consider the shock given to agricultural industry generally throughout the upper portion of the province, combined with the fact that under the Burmese Government no tax whatever was put on cotton lands, I fear that if full rates of tax be now imposed, the revival of this particular cultivation will be materially retarded. I do not propose the lower rates as a permanent measure, but as one which might be allowed to exist for a few years. I respectfully beg to state that I do not think this measure would interfere with the principles which it may hereafter be found necessary to adopt in the assessment of the land revenue; it will be received as it is intended, namely, as an encouragement to cotton cultivation, and nothing else. It certainly may be doubted whether it is a sound principle for Government to encourage one branch of industry more than another; but I consider that in a country, such as Pegu, without capital, without enterprise, no new branch of industry could be introduced, or decayed one revived, but through means of some such measure as that proposed.

3. I beg respectfully to state that I prefer the measure above proposed to that of giving a fair price for the cotton for a year or two. This appears to me to involve an interference with seller and buyer, which is more studiously to be avoided than the encouragement by Government, through means of a light tax, to any one particular branch of industry. It is exceedingly difficult, if not impossible, in such a case to discover what is a fair price for the produce; and I am very certain that the offer from Government to become the purchaser of the produce would engender suspicion on the part of the producers, and perhaps have the effect of giving them a prejudice against the cultivation, rather than of holding out an inducement to pursue it.

4. As soon as the South Sea Island cotton seed is received, I shall be careful to have it distributed where it is likely to be useful.

5. I beg to solicit the orders of the Most Noble the Governor-general in Council relative to the further employment of Mr. Price in this province.

I have, &c.

(signed) *A. P. Phayre*,
Commissioner of Pegu, and Agent to the
Governor-General.

Pegu Commissioner's Office, Rangoon,
1 August 1854.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 253

(No. 3755 of 1854.)

From *G. F. Edmonstone, Esq.*, Secretary to the Government of India, to Major *A. P. Phayre*,
Commissioner of Pegu.

Sir,

I HAVE the honour to acknowledge the receipt of your letter, dated the 1st instant, No. 11, wherein you repeat your desire to be permitted to assess cotton lands at a lower rate than lands of the same character bearing other crop, and state that you prefer this measure to that of encouraging the cultivation of cotton by guaranteeing a fair price for the produce.

2. In reply, I am directed to observe that either proposal of the two adverted to by you is open to objection, but that under the circumstances described by you as existing in the time of the Burmese rule, the fixing a lower assessment on cotton lands seems to the Most Noble the Governor-general in Council the less objectionable; and adverting to the great anxiety felt in England for every exertion being made in every quarter to increase the supply of cotton, his Lordship in Council sanctions the adoption of the measure urged by you, care being taken to show that it is not regarded as permanent.

3. With reference to the 5th para. of your letter, I am desired to acquaint you that the Government do not further require the services of Mr. Price.

I have, &c.
(signed) *G. F. Edmonstone*,
Secretary to the Government of India.

Fort William, 25 August 1854.

I.
Bengal and
North Western
Provinces.

No. 130.

Foreign Depart
ment.

EXTRACT Foreign Letter from India, dated 22 March (No. 32) 1856.

76. With paragraph 4 of our letter of 17th July 1854,* we forwarded to the Commissioner a couple of bushels of seed of the South Sea Island cotton, which he was requested to distribute at his discretion, and to report thereon.

77. In his letter of 30th May last, the Commissioner stated that none of the seed had germinated, and the Deputy Commissioner of Henzada attributed the failure to the badness of the seed. During a tour made by the Commissioner in February, March, and April, through the districts of Prome and Toungoo, he had made particular inquiries regarding the cotton cultivation. He submitted a memorandum on that subject, and also on the growth of silk. He likewise forwarded specimens of both products.

78. A copy of the memoranda furnished by the Commissioner, together with the specimens of cotton and silk, was sent to the Chamber of Commerce, for information, and the Agricultural Society was requested to forward two more bushels of fresh seed of the South Sea Island cotton, for transmission to the Commissioner of Pegu.

79. The Agricultural Society having sent us a maund of the required cotton seed, with a request to be furnished with any reports that the Commissioner of Pegu might submit, on the result of his experiments with it, as also samples of the cotton raised from it, we have forwarded the same to the Commissioner, and have requested him to submit the result of his experiments.

80. The Chamber of Commerce submitted reports on the samples of cotton and silk which had been sent to them; and copies of them have been transmitted to the Commissioner for his information.

(No. 2135 of 1855.)

From *J. W. Dalrymple, Esq.*, Officiating Under Secretary to the Government of India,
to the Secretary to the Agricultural Society.

Sir,

I AM directed by the President in Council to forward, for the information of the society, the accompanying specimens of vegetable products, furnished by Lieutenant *E. C. J. Williams*, Superintendent of Survey in Pegue, together with an extract, para. 20, from his letter, dated the 20th December last, No. 181, forwarding them.

Fort William, 15 June 1855.

I have, &c.
(signed) *J. W. Dalrymple*,
Officiating Under Secretary to the Government
of India.

1855.
Cons. 6 July.
Nos. 109 to 118
Cons. 31 August
Nos. 120 to 127
Cons. 21 Sept
Nos. 91 and 9

* Letter No. 67 of 1854.

I.
Bengal and
North Western
Provinces.

EXTRACT (para. 20) of a Letter from the Superintendent of the Survey in Pegu, to Major *Phayre*; dated 20 December 1854, No. 181.

A principal article of cultivation is rice; in addition, but to a very small extent, cotton of a short staple; most villages having a small patch, though I have not met with the black soil so favourable to its growth.

No. 9.

(No. 66 of 1855.)

From Major *A. P. Phayre*, Commissioner of Pegue, and Agent to the Governor-General, to *C. Beadon*, Esq., Secretary to the Government of India, Officiating Foreign Department, Fort William.

Sir,

WITH reference to para. 4 of letter to my address, No. 3086, dated the 17th July 1854, from Mr. Secretary *G. F. Edmonstone*, transmitting two bushels of South Sea Island cotton seed, I regret to say that none of the seed germinated. I beg to annex copy of a letter to my address on this subject, No. 63, dated 7th February 1855, from Captain *C. D. Grant*, the Deputy Commissioner of Henzadah, who attributes the failure to the badness of the seed.

2. During a tour I made in February, March, and April, through the districts of Prome and Toungoo, I made particular inquiries regarding the cotton cultivation, and I beg to annex, for the information of the Honourable the President of the Council of India in Council, a memorandum on that subject, and also on the growth of silk.

3. Specimens of both products are forwarded in parcels to your address.

I have, &c.
(signed) *A. P. Phayre*,
Commissioner of Pegue, and Agent
to the Governor-General.

Pegue Commissioner's Office,
Rangoon, 30 May 1855.

(No. 63 of 1855.)

From Captain *C. D. Grant*, Officiating Deputy Commissioner, Henzadah, to Major *A. P. Phayre*, Commissioner of Pegue and Agent to the Governor-General.

Sir,

IN accordance with the instructions contained in the first portion of para. 2, of your revenue letter, No. 104, dated 17th August 1854, I have the honour to state, that I distributed to several natives a portion of the South Sea Island cotton seed supplied to me, and also had a patch of ground sown with the remainder under my personal superintendence.

2. I beg to report, for your information, that every attempt to grow the same has proved a failure, which, in the opinion of those natives to whom I supplied the seed, is attributed to the badness of the seed, and not to the effects of soil or climate.

I have, &c.
(signed) *C. D. Grant*,
Officiating Deputy Commissioner of Henzadah.

Henzadah Districts,
Deputy Commissioner's Office, Henzadah,
7 February 1855.

(True copy.)
(signed) *A. P. Phayre*,
Commissioner of Pegue, and Agent to the Governor-General.

MEMORANDUM on the Indigenous Cotton of the Northern Districts of the Province of Pegue.

MOST of the cotton produced in the province of Pegue is grown on the hills which form the water-shed of the country lying between the rivers Irrawaddee and Sitang; a considerable quantity is also produced on the eastern slopes of the Arrakan range. The elevation at which it is planted varies from 400 to 800 or 1,000 feet above the sea. The soil is prepared for it during the months of January and February, by the forest trees being cut down, and left to dry in the sun, until about the beginning of May, or just before the first showers of rain, when the fallen and dried timber is fired. The seed is then sown amongst the ashes, a hole to receive it being scraped in the soil with a small hand hoe or dha. Paddy and cotton are, in some parts of the country, generally sown together. The paddy ripens, and is reaped during October or November. The cotton commences to be picked towards the end of February. The plant is an annual, and from the rude

system of cultivation existing among the people, and the want of terraces, it is found necessary, on the hill sides, to make a fresh clearing of the forest for the crop of each year.

The tribes who follow this mode of cultivation are Karens, Khyens, and a few Burmese.

The cultivators sell the cotton uncleaned, that is, with the seed still attached to it. They have a gin, similar to the churka used in India, to clean what is required for their own use. They state that 100 viss (or 365 lbs.) of uncleaned cotton produce 30 or 35 viss (109 lbs. to 127 lbs.) of cleaned.

The sample of uncleaned cotton herewith sent was purchased at a village situated in the hills, on the eastern border of the Prome districts; it was grown at an elevation of about 300 feet above the sea, and is a fair sample of the quality of the cotton raised in Pegue.

The present price of this cotton is very high, being not less on the spot than 20 rupees the 100 viss, nearly one anna a pound for uncleaned cotton. Three years ago the ordinary price was from six to seven rupees the 100 viss. This great increase in price arises from the entire interruption to agriculture during the war, and the confusion and want of confidence among the people, until about the sowing season of 1854.

Up to the year 1852 the cotton grown throughout the Prome and Meeaday districts was purchased by Chinese merchants, who established depôts for cleaning it on the banks of the Irrawaddy. They used to clean it with iron gins, and convey the cleaned cotton by water to Ava, and from thence *viâ* Bhamo to the province of Yunnân. As an instance of the price which the Chinese are prepared to pay for raw cotton, I may mention that during the present year (March 1855) the Chinese merchants in Ava have paid 55 tikâls of silver (or say rupees) per 100 viss for the cleaned cotton, and that the quantity exported was valued at eight lakhs of rupees. It still has to be carried more than 200 miles from Ava by water to Bhamo, and then to be put on the backs of mules, for several days' journey by land, before reaching its destination. Taking the difference of weight between the tikâl and rupee, the price of this cotton sold in Ava may be put down at 2½ annas a pound. There appears no reason why English twist should not find a ready sale in Ava or the Yunnân market.

The cotton cultivating tribes in the province of Pegue are now rapidly extending their cultivation, and in another year or two I expect to see prices down to about eight rupees the 100 viss (365) lbs. of uncleaned cotton.

Prome, 4 April 1855.

(signed) *A. P. Phayre*,
Commissioner of Pegue, and Agent to the
Governor-General.

(No. 2267 of 1855.)

From *J. W. Dalrymple*, Esq., Officiating Under Secretary to the Government of India,
to the Secretary to the Chamber of Commerce.

Sir,

I AM directed by the President in Council to forward to you, for the information of the Foreign Department, a copy of the undermentioned papers, together with the specimens of cotton and silk therein referred to.

Memorandum by the Commissioner of Pegue on the indigenous cotton of the northern districts of the province, dated 4 April 1855.

Memorandum by ditto on silk produced in the northern portion of the province, dated April 1855.

Fort William, 29 June 1855.

I have, &c.
(signed) *J. W. Dalrymple*,
Officiating Under Secretary to the
Government of India.

(No. 2268 of 1855.)

From *J. W. Dalrymple*, Esq., Officiating Under-Secretary to the Government of India,
to the Secretary to the Agri-Horticultural Society.

Sir,

IN continuation of the letter to your address, dated 10 July 1854, No. 2957, I am directed by the President in Council to request that you will do him the favour to forward to this office, as early as possible, two more bushels of fresh seed of the South Sea Island cotton for transmission to the Commissioner of Pegue.

Fort William, 29 June 1855.

I have, &c.
(signed) *J. W. Dalrymple*,
Officiating Under Secretary to the
Government of India.

I.
Bengal and
North Western
Provinces.

From *A. H. Blechnyden*, Esq., Secretary to the Agri-Horticultural Society, to
J. W. Dalrymple, Esq., Officiating Secretary to the Government of India.

Sir,

IN reply to your letter of this date I have the honour to forward one maund of cotton seed of two kinds, as noted in the margin.*

This seed is of a very superior description. Cotton raised from it was valued, in September 1854, by Mr. Bazley, the President of the Chamber of Commerce at Manchester, at 2s. 6d. and 2s. per lb. respectively, when the ordinary short staple American cotton was selling at 6d. to 7d. per lb.

The Society will be glad to receive, in due course, any reports which the Commissioner of Pegue may submit to Government on the result of his experiments with this seed, as also samples of the cotton raised from it.

I have, &c.
(signed) *A. H. Blechnyden*,
Secretary Agri-Horticultural Society.

Metcalf Hall, Calcutta,
29 June 1855.

(No. 2369 of 1855.)

From *J. W. Dalrymple*, Esq., Officiating Under Secretary to the Government of India,
to the Secretary of the Agri-Horticultural Society.

Sir,

Foreign Depart-
ment.

I AM directed to acknowledge the receipt of your letter dated the 29th ultimo, and in reply to communicate the thanks of the Government for the two kinds of cotton seed sent therewith.

2. The seed has been forwarded to the Commissioner of Pegue, and he has been requested to submit the result of his experiments with the seed, as also samples of the cotton raised from it.

3. I am requested to state that the seed forwarded by the secretary in July last year has not germinated; every attempt to grow the same has proved a failure; and the Officiating Deputy Commissioner at Henzada reports that the failure "is attributed to the badness of the seed, and not to the effects of soil or climate."

4. A copy of a memorandum by the Commissioner of Pegue on the indigenous cotton of the northern districts of the province, dated the 4th April last, is inclosed for the information of the Society.

I have, &c.
(signed) *J. W. Dalrymple*,
Officiating Under Secretary to the
Government of India.

Fort William, 3 July 1855.

(No. 2368 of 1855.)

From *J. W. Dalrymple*, Esq., Officiating Under Secretary to the Government of India, to
Major *A. P. Phayre*, Commissioner of Pegue, and Agent to the Governor-General.

Sir,

Foreign Depart-
ment.

I AM directed by the President in Council to acknowledge the receipt of your despatch, dated the 30th May last, No. 66, reporting that the South Sea Island cotton seed, transmitted for cultivation in Pegue, has not germinated; and in reply to acquaint you that a box to your address has been forwarded by the Honourable Company's steam-vessel "Tenasserim," containing one maund of two kinds of seed, as noted in the margin,* received from Agri-Horticultural Society.

2. You will have the goodness to submit the result of your experiments with this seed, as also samples of the cotton raised from it if it germinates.

I have, &c.
(signed) *J. W. Dalrymple*,
Officiating Under Secretary to the
Government of India.

Fort William, 3 July 1855.

* 20 Seers of seed, raised at Melbourne (Australia), from Sea Island stock.
20 Seers of imported Sea Island cotton seed.

40 Seers, or 1 maund.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 257

(No. 2370 of 1855.)

From *J. W. Dalrymple, Esq.*, Officiating Under Secretary to the Government of India, to
Captain T. E. Rogers, R. N., Superintendent of Marine.

I.
 Bengal and
 North Western
 Provinces.

Sir,

*I AM directed to forward to you the accompanying box to the address of the Commissioner of Pegue, containing cotton seeds, and to request that you will despatch it to Rangoon by the Honourable Company's steam-vessel "Tenasserim."

Foreign Department.

I have, &c.

(signed) *J. W. Dalrymple,*

Officiating Under Secretary to the Government
 of India.

Fort William,
 3 July 1855.

From *H. W. J. Wood, Esq.*, Secretary to the Bengal Chamber of Commerce, to *J. W. Dalrymple, Esq.*, Officiating Under Secretary to the Government of India, Foreign Department, Fort William.

Sir,

I AM instructed by the Committee of the Chamber of Commerce to acknowledge the receipt of your letter, No. 2267, of the 29th June, forwarding, for the information of the Chamber, memoranda by the Commissioner of Pegue on cotton and silk produced in that province, together with specimens of those articles, and for these interesting communications, I am directed to tender the Committee's respectful thanks.

2. The sample of cotton has been submitted for the opinions of three competent judges, and I have the honour to transmit their individual reports.

3. The specimen of silk is in every respect similar to that which the Government forwarded to the Chamber in December last, and as Mr. Kilburn's report upon that sample applies exactly to the one now before the Chamber, the Committee conceives that a copy of that report is all that would be required by Government.

I have, &c.

(signed) *H. W. J. Wood,*

Secretary to the Bengal Chamber of Commerce.

Calcutta,
 7 August 1855.

REPORTS on Samples of Pegu Cotton.

I find this cotton fibre (*gossypium*) in all its characteristics like many other specimens which have been sent to the Bengal Agricultural and Horticultural Society from parts of the East India Company's territories which lie far eastwardly of the River Ganges, being proximate to and even amidst the high and mountainous ranges lying between the parallels of 20 and 27 north latitude.

It is very probable that the climates of these localities are very similar, and that in their present state and condition they are calculated to give a peculiar character to the fibre of the vegetable cotton (*gossypium*), in like manner as is exemplified in some productions of the animal world.

Thus I instance analogously the Rungpore and Thibetian horse as possessing very close assimilation, and observe that when compared with the horse of the plains lying far westwardly, viz., of the Deccan, Scinde, Persia, and Arabia, notwithstanding the variations found in the said animal of each of these last-named countries, though showing much general similitude, the main characteristics of the two races are so obviously marked, as to admit of no dispute about their distinctiveness, the former exhibiting the primitive rudeness of nature, the latter the graces and amenities consequent on improved breeding and better chosen localities.

I know not the character and status of the country about Prome, but presume it may partake more or less of jungly state, and be proximate to highly mountainous ranges.

Doubtless the climates and soils of all countries may undergo great changes by the arts of man, and be made suitable for yielding improved products of agricultural industry.

It is not my office, however, to hold a dissertation on such matters, but to report on that which is laid before me, and to accompany the same with any useful suggestions.

The cotton is excellent in some respects, but it is very different in its character and nature from that which is grown on most of the cotton-growing localities in India westward of the Ganges.

The fibre is coarse, curly, harsh, and rather short; and it is very tenaciously attached to the seed; but it is most exceedingly strong, and in this respect lies its excellence.

Its colour, condition, and healthfulness are truly good; and the seeds are very abundantly enveloped in wool.

Notwithstanding its great strength, there would be much difficulty and much breakage in detaching the fibre from the seed by any of the ordinary gins or extraordinary saw-gins in use.

The common Indian hand-churka is probably the best machine adaptable for its most perfect divestment.

296—Sess. 2.

. K K

Its

I.
Bengal and
North Western
Provinces.

Its value in Liverpool, in March month 1855, may be taken at $3\frac{1}{2}$ *d.* to 4 *d.* per pound, and in May month 1855 at $4\frac{1}{2}$ *d.* to 5 *d.* per pound, if pretty well detached from the seed, *i. e.* without much breakage.

I would beg to suggest to the Pegue Commissioner the probable advantage which might arise from changing and improving the breed or variety, if I may so say.

This may be accomplished by growing, intimately intermixed, the best American varieties with the indigenous kinds.

The new varieties which might be expected to arise, if then re-sown in conjunction with the best and purest American, would in all probability yield a very acceptable cotton, partaking of the strength of the indigenous parent, and of the length, fineness, and flexibility of that of the American kind.

The acclimation being perhaps thus better maintained and illustrated in a new variety than by an attempt at once to substitute the American for the indigenous kind.

But each system might be tried simultaneously in different or even the same localities.

Thus the course of future culture would be best determined by the degree of success or otherwise found in each system.

I will only add, that if the Commissioner shall deem my suggestion worthy of a fairly-tried experiment, that I hope he will then cause the result in all particulars attending the trials in the cultivation to be laid before the Chamber of Commerce and the Agricultural and Horticultural Society of Bengal.

(signed) *Joseph Willis.*

Clean and of good colour, free from stains, the staple or fibre is particularly short, though strong.

The sample is not ginned, but has the seed in it as taken from the pod. Taking middling Orleans cotton in the Liverpool market at about the last price of 7 *d.* per pound, I value the sample received, when in its ginned state, or free from seed, at $4\frac{1}{2}$ *d.* per pound in Liverpool.

The unginned cotton may be expected to give two-thirds weight of seeds and one-third of cotton.

(signed) *Wm. Blundell.*

This is "kupass," or cotton taken from the pod without being separated from the seed, and in its present state is not in a merchantable condition, and consequently it is impossible to put a valuation upon it that would be likely to serve any practical purposes.

Separated from the seed, I think it might be worth $2\frac{1}{2}$ *d.* or 3 *d.* per pound in England.

It is a green-seeded cotton, of sound healthy appearance, but it is probably either originally of an inferior stock, or has degenerated through unskilful cultivation.

The staple is very short, the fibre of very considerable strength, but not fine; the seed is, for a cotton indigenous to India, particularly well covered or clothed with the cotton wool, which, however, adheres to the seed-husk with extreme tenacity.

It is particularly clean, and the colour and condition generally (having regard to the fact of the sample being kupass) are both very good.

I have had a small portion of the cotton separated from the seed by the cottage saw-gin, which was presented by the Government to the Agricultural and Horticultural Society, and is now in their rooms in the Metcalfe Hall; and I find that, after undergoing this process, the staple is much cut or shortened, and a considerable quantity of the cotton lost by remaining attached to the seed. This result exhibits a peculiarity of this cotton which I consider to be its greatest defect, and one likely to interfere materially with the profitable cultivation of this cotton; but I am inclined to think that were Seychelles or Pettigulph seed sown in the soil where this cotton has been grown, they would probably yield a more profitable crop, and certainly produce a description of cotton far superior to this.

(signed) *Stewart Douglass.*

(True copies.)

(signed) *H. W. J. Wood,*
Secretary to the Bengal Chamber of Commerce.

(No. 3142 of 1855.)

From *J. W. Dalrymple, Esq.,* Officiating Under Secretary to the Government of India,
to the Secretary to the Agricultural and Horticultural Society.

Sir,

Foreign Depart-
ment.

I AM directed by the President in Council to forward to you, for the information of the Society, the accompanying copy of a letter and of its enclosures from the Secretary to the Bengal Chamber of Commerce, dated the 7th instant, submitting reports on samples of cotton and silk forwarded to Government by the Commissioner of Pegue.

I have, &c.

(signed) *J. W. Dalrymple,*
Officiating Under Secretary to the Government
of India.

Fort William,
31 August 1855.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 259

(No. 3143 of 1855.)

From *J. W. Dalrymple*, Esq., Officiating Under Secretary to the Government of India, to Major *A. P. Phayre*, Commissioner of Pegue, and Agent to the Governor-General.

I.
Bengal and
North Western
Provinces.

Sir,

I AM directed by the President in Council to forward, for your information, the accompanying copy of a letter and of its enclosures from the Secretary to the Bengal Chamber of Commerce, dated the 7th instant, submitting reports on the samples of cotton and silk forwarded to Government with your letter dated the 30th May last, No. 66. Foreign Department.

Fort William,
31 August 1855.

I have, &c.
(signed) *J. W. Dalrymple*,
Officiating Under Secretary to the Government
of India.

From *A. H. Blechynden*, Esq., Secretary, Agri-Horticultural Society, to *J. W. Dalrymple*, Esq., Officiating Under Secretary to the Government of India.

Sir,

I AM directed by the Agricultural and Horticultural Society of India to acknowledge receipt of your letter, No. 3142, of the 31st August, forwarding for its information copy of a report and its enclosures from the Bengal Chamber of Commerce, on certain samples of cotton and silk from Pegue, and to tender its respectful thanks for the same.

I am further instructed to request the favour of being furnished with a copy of the memoranda submitted by the Commissioner of Pegue on the cotton and silk of that province, to which allusion is made in the letter from the Secretary Chamber of Commerce.

Metcalf Hall, Calcutta,
17 September 1855.

I have, &c.
(signed) *A. H. Blechynden*,
Secretary Agricultural and Horticultural Society.

(No. 3394 of 1855.)

From *J. W. Dalrymple*, Esq., Officiating Under Secretary to the Government of India, to the Secretary to the Agricultural and Horticultural Society.

Sir,

IN compliance with the request made in your letter of the 17th instant, I have the honour to forward herewith, for the use of the Agri-Horticultural Society, copies of the memoranda submitted by the Commissioner of Pegu on the cotton and silk of that province. Foreign Department.

Fort William,
21 September 1855.

I have, &c.
(signed) *J. W. Dalrymple*,
Officiating Under Secretary to the Government
of India.

EXTRACT Foreign Letter from *India*, dated 22 January (No. 8) 1857.

92. In August 1855 the Chamber of Commerce presented, on behalf of Mr. W. Blundell, a case of Sea Island cotton seed, received from Manchester. Mr. Blundell was of opinion that the seed was likely to produce a very desirable cotton, and suggested that it should be forwarded to the Commissioner of Pegu for trial. 1855. Cons. 10 August. 293 to 296. 1856. Cons. 20 June.

93. The cotton seed was sent to the Commissioner, with a request that he would have it tried in the manner he might think most advantageous and report the result for our information.

94. The Commissioner reported that the cotton seed despatched with our letter of 3d July* 1855 had been sent by him to the Deputy Commissioner of Henzada; for a portion thereof to be distributed in that district, and the remainder to be made over to the Assistant Commissioner of Tharawaddie for a like purpose, but that the seed had not germinated in either district. The case of Sea Island cotton seed sent with our letter of 10 August 1855 had been given to the Deputy Commissioner of Bassein for distribution in that district, a moiety being sent on to Henzada for distribution there. Captain Grant reported that

* Letter No. 32 of 1856, p. 76 to 80.

I.
Bengal and
North Western
Provinces.

that none of the above seed sent in December 1855 came up, but that he had reserved a portion thereof for the purpose of being set in August or September 1856, and that the result would be reported in due course. The seed sent to Henzada had altogether failed.

95. By a report received from the Assistant Commissioner of Tharawaddie, there appeared to be a probability of an experiment to introduce the Pernambuco cotton seed being attended with better success.

From *H. W. J. Wood*, Esq., Secretary Bengal Chamber of Commerce, to *J. W. Dalrymple*, Esq., Officiating Under Secretary to the Government of India, Foreign Department, Fort William.

Sir,

MR. W. BLUNDELL, whose report upon a sample of cotton from Pegu was transmitted in my letter of yesterday, has requested the Committee of the Chamber of Commerce to present to the Government of India, on his behalf, the accompanying case of Sea Island cotton seed, lately received from Mr. Bazley of Manchester, who is much interested in the production in this country of a superior description of cotton than has hitherto been exported from India.

Mr. Blundell is of opinion that the seed is likely to produce a very desirable cotton, and will be glad if the Government be pleased to forward it to the Commissioner of Pegu for trial.

That gentleman has another case of seed which he will have much pleasure in presenting to Government for trial in the Deccan; if that experiment be approved of, he states that Dr. Riddell, of Bolarum, has sent to the Agricultural Society here, a sample of very fine cotton raised from Mauritius seed, and valued at from 2s. to 2s. 8d. per lb. in Liverpool.

I am also instructed by Mr. Blundell to state that he has received a cotton gin of the best and latest construction for separating the seed from long-staple cotton, and that he will always be happy to make it available for any experiments the Government may wish to make.

Bengal Chamber of Commerce, Calcutta,
8 August 1855.

I have, &c.
(signed) *H. W. J. Wood*,
Secretary.

(No. 2885 of 1855.)

From *J. W. Dalrymple*, Esq., Officiating Under Secretary to the Government of India, to Major *A. P. Phayre*, Commissioner of Pegu, and Agent to Government.

Sir,

I AM directed by the President in Council to advise you of the despatch of a case to your address containing Sea Island cotton seed, and to request that you will have the seed tried in the manner you may think most advantageous and report the result for the information of Government.

Fort William,
10 August 1855.

I have, &c.
(signed) *J. W. Dalrymple*,
Officiating Under Secretary to the Government
of India.

(No. 2886 of 1855.)

From *J. W. Dalrymple*, Esq., Officiating Under Secretary to the Government of India, to *H. W. J. Wood*, Esq., Secretary to the Punjab Chamber of Commerce.

Sir,

IN reply to your letter, dated the 8th instant, I have the honour to request that you will communicate the thanks of the President in Council to Mr. Blundell for the case of Sea Island cotton seed presented by him to Government. The seed will be forwarded to the Commissioner of Pegu, with instructions to have it tried in the manner he may think most advantageous and report the result.

2. His Honor in Council will be happy to accept the other box of seeds referred to in para. 3 of your letter, and to despatch it with similar instructions to the resident at Hyderabad.

3. Mr. Blundell's offer about the cotton gin will be borne in mind by the Government.

Fort William,
10 August 1855.

I have, &c.
(signed) *J. W. Dalrymple*,
Officiating Under Secretary to the Government
of India.

Foreign Department.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 261

I.
Bengal and
North West
Provinces.

(No. 2886 A. of 1855.)

From *J. W. Dalrymple*, Esq., Officiating Under Secretary to the Government of India,
to *Captain T. E. Rogers*, I.N., Superintendent of Marine.

Sir,

I AM directed by the Honourable the President in Council to request that you will cause Foreign Depart
the accompanying box* to the address of the Commissioner of Pegu to be forwarded by ment.
the first steamer proceeding to Rangoon.

I have, &c.

(signed) *J. W. Dalrymple*,
Officiating Under Secretary to the Government
of India.

Fort William,
10 August 1855.

(Government, No. 132 of 1856.)

From Major *A. P. Phayre*, Commissioner of Pegu, and Agent to the Governor-General,
to *G. F. Edmonstone*, Esq., Secretary to the Government of India, Foreign Department,
Fort William.

No. 1.

Sir,

I HAVE the honour to report, for the information of the Right Honourable the Governor- Revenue.
General in Council, that the cotton seed despatched per "Tenasseim," for distribution in
this province, as per Mr. Under Secretary Dalrymple's letter, No. 2368, of the 3d July 1855,
was duly received by me and sent to the Deputy Commissioner of Henzada, for a portion
thereof to be distributed in that district, and the remainder to be made over to the Assistant
Commissioner of Tharawaddee for a like purpose, but I regret to add that the seed is
reported in the letters noted in the margin,† copies of which are appended, as not having
germinated in either district.

2. The case of Sea Island cotton seed, of the despatch of which I had been advised by
Mr. Under Secretary Dalrymple's letter, No. 2885, of the 10th August 1855, remained at
Rangoon till the end of October 1855, awaiting my return from Umerapoora, when it was
given over to the Deputy Commissioner of Bassein for distribution in that district, a moiety
being sent on to Henzada for distribution there. Captain Grant reports that none of the
above seed, set in December 1855, came up but that a portion thereof, was reserved by
him for the purpose of being set in August or September 1856, and that the result will be
reported in due course. The seed sent to Henzada appears to have altogether failed.

3. By a report received from Captain Brown, the Assistant Commissioner of Tharawaddee,
it appears that there is a probability of an experiment to introduce the Pernambuco cotton
seed being attended with better success. The few seeds he had set germinated, but as the
young plants required watering, Captain Brown deemed it better to defer the general distri-
bution of the seed till immediately before the rains (now close at hand), and he trusts he
will be able to report favourably on the same.

I have, &c.

(signed) *A. P. Phayre*,
Commissioner of Pegu, and Agent
to the Governor-General.

Pegu Commissioner's Office, Prome,
9 May 1856.

(No. 80.)

To the Commissioner of Pegu, and Agent to the Governor-General, Rangoon.

Sir,

In reply to your letter, No. 354, of the 14th current, and with reference to the corre- Revenue.
spondence noted in the margin,‡ I have the honour to inform you that not one of the cotton
seeds sent to me germinated. I tried sowing them different times of the year, and in
different soils, both dry and rather wet, but without one of them sprouting; I covered some
lightly with earth, and sprinkled others on the surface, but all either rotted in the ground or
were eaten by some insect. I do not think that the seeds were fresh; if it were the produce
of the previous year, it probably got wet in the passage, and the great heat which is pro-
duced among damp cotton seed destroyed its general qualities.

2. After receiving the Pernambuco cotton seed sent with your letter, No. 317, dated the
16th January 1856, I ascertained, by sowing some of it, that it was fresh. It has ger-
minated, and the plants appear healthy, but at this season it requires to be watered, and if
given to the Burmese before the rains, would be lost, or if planted would, after sprouting,
die

* Containing Sea Island cotton seed.

† No. 80, 22 February 1856, from Acting Commissioner, Tharawaddy; No. 69, 24 March 1856, from
Officiating Deputy Commissioner, Henzada.

‡ No. 127, 16th July 1855; No. 272, 14th December 1855.

I.
Bengal and
North Western
Provinces.

die off from want of water; I will therefore keep it till just before the rains set in, and after distributing it among the people, will, I hope, be able to give a favourable report of it.

3. In my letter, No. 92, of the 22d January last, I had the honour of informing you that the seed sent to me by Captain Grant had not germinated.

4. In addition to the seeds sent by you, I myself procured a supply through Messrs. Gladstone, Wyllie & Co. of Rangoon, but it proved all bad; and as it was of the same sort, and came from the same source as that sent by you, the same observations apply to it.

I have, &c.
(signed) *D. Brown*, Captain,
Assistant Commissioner, Tharawaddy.

Tharawaddee Assistant Commissioner's Office,
Mengzee, 22 July 1856.

(True copy.)
(signed) *A. P. Phayre*,
Commissioner of Pegu, and Agent to
the Governor-General.

(No. 69 of 1855-56.)

To the Commissioner of Pegu, and Agent to the Governor-General.

Revenue.

Sir,
In reply to your letter, No. 128, of the 16th July last, I have the honour to report that all the cotton seeds received from you were distributed by my predecessor amongst the inhabitants of this district. I find, on inquiry, that none of the seeds have germinated, but from what cause the people appear to be ignorant, though they seem disposed to attribute the failure to the oldness of the seed.

I have, &c.
(signed) *D. T. Morton*,
Off. Dy. Commissioner.
Henzadah Deputy Commissioner's Office,
24 March 1856.

(True copy.)
(signed) *A. P. Phayre*,
Commissioner of Pegu, and Agent to
the Governor-general.

Revenue Department, 22d September (No. 7.) 1847.

Our Governor of the Presidency of Fort William, in Bengal.

Circular.

In supersession of our former orders, directing you to consign all shipments of experimental cotton to Mr. William Laird, of Liverpool, we now desire that you will in future cause the bills of lading to be made out in our favour, and that you will consign the cotton to the care of Mr. William Rathbone, our authorised agent at Liverpool.

We are, &c.
(signed) *H. St. C. Tucker*,
J. L. Lushington,
&c. &c.
London, 22 September 1847.

Revenue Department, 20th October (No. 13) 1847.

Our Governor-General of India in Council.

Cotton.

Para. 1. WE have received a letter from our Governor-general, dated at Simla, 1st July (No. 9) 1847, with which his Lordship forwards to us the further correspondence which has taken place with reference to the proceedings of the Lieutenant-governor of the North Western Provinces in regard to the arrangements entered into with Mr. Hamilton Bell for the experimental cultivation of cotton in the neighbourhood of Agra.

2. Under the agreement made with Mr. Bell in 1846 (which was sanctioned in our despatch of the 25th November (No. 14) of that year) Mr. Bell was granted an advance of 1,32,000 rupees, for the purpose of cultivating by engagements with the ryots 10,000 beegas of a superior description of native cotton (Baugcheenee), on the understanding that "any profit which might result from the transaction, after replacing without interest the sums advanced, should be paid over to himself."

3. We

I.
Bengal and
North Western
Provinces.

21st Sept. 1847.

3. We now learn that in consequence of the lateness of the season it was found impracticable to extend the cultivation in the degree at first contemplated, and Mr. Bell was permitted to purchase sufficient quantities of the best cottons in the native markets to admit of a fair opinion being formed in this country of their qualities. It is stated that the total quantity grown and purchased will not exceed 6,000 maunds, costing, charges included, about 54,000 rupees. Specimens of these cottons have been received by us, and we herewith transmit to you the report of the brokers, Messrs. Tetley & Sons, which you will observe to be highly favourable as regards their colour and cleanness, but not so in respect of the staple, which is stated to be too short for general purposes. Mr. Tetley considers the present value of these cottons to be from 6 *d.* to 6 $\frac{1}{4}$ *d.* per pound, the price of middling to fair American

4. In consequence of its having been found impracticable to carry out the experiment during the past year on the plan originally intended, the Lieutenant-governor authorised its renewal for the present year on the same terms, viz., an advance of 1,32,000 rupees for the cultivation of 10,000 beegas, it being stipulated that no cotton is to be purchased, and none shipped on account of Government, except that which has been grown under contract with Mr. Bell, and from seed furnished or approved by him. The advantages secured to Mr. Bell are the same as those promised under the former arrangement viz., that the profit on the transaction, after replacing without interest the sums advanced, shall be paid over to him.

5. It was with some surprise that we learnt that the Lieutenant-governor had renewed for another year an arrangement to which we had given a very reluctant assent, which was only given because we had every reason to believe that the scheme would have been carried into execution before we had the opportunity of communicating our objections to it. We cannot refrain from expressing our opinion that the renewed engagement is, like the former one, an improvident arrangement on the part of the Lieutenant-governor, the whole risk of the transaction being borne by us, and the whole profit (if any) accruing to the proposer, Mr. Bell. We do not mean by these remarks to undervalue the public spirit exhibited by that gentleman in offering his services in carrying out an experiment in which our recent proceedings show that we take a deep interest; nor are we unwilling that his own interests should be advantaged in proportion to the extent to which he may be enabled to assist in furthering a great public object; but we are at the same time of opinion that it would not have been unreasonable to have stipulated that the advance made to Mr. Bell should have been repaid with interest, in the event of the experiment realising a profit. As, however, these observations will not in all probability reach the Lieutenant-governor until the operations of the present year shall have been brought to a close, it is too late for us to refuse our consent to the proceedings now reported, and we can only desire that he will bear them in mind in concluding arrangements for another season, which from Mr. Shakespear's letter of the 12th June 1847, appear to be contemplated.

6. Mr. Bell is particularly anxious that we should withdraw the order contained in our despatch of the 25th November 1846, for the consignment of the cotton to Mr. William Laird, of Liverpool, and that he should be permitted to dispose of it through the medium of his own agents. In this request he is supported by the Lieutenant-governor and by the Governor-general. We do not think that the reasons which Mr. Bell urges in support of his wish are entitled to weight. The real value of the cotton in the English market will be determined, not by the reports of the brokers, but by the estimate which the manufacturers may form of it after having subjected it to the operation of their machines. It is necessary, considering the magnitude of the advances which we are now making at our several presidencies for the improvement of cotton cultivation, that we should take all reasonable precautions for securing the Company against the possible risk of loss; and we therefore desire, in regard to this cotton, as we have already directed, under date the 22d September (No. 7) 1847, with respect to all future shipments of experimental cotton, that the bills of lading should be made out in our favour, and the cotton consigned to the care of Mr. William Rathbone, our authorised agent at Liverpool. We have recently resolved, at the request of the Manchester Commercial Association, that a portion of all the cotton consigned to us should be forwarded for sale in that town,

I.
Bengal and
North Western
Provinces.

in order that the spinners and manufacturers of the neighbourhood might have the means of becoming acquainted with its quality. We shall adopt the same course with respect to the cotton supplied by Mr. Bell; and we shall be prepared to take into consideration any application which he may make for placing a portion of it in the hands of any parties whom he may name as possessing his confidence, in order that he may have full reason to be satisfied that all due means are taken for bringing it properly under the notice of the manufacturers.

7. We transmit herewith, for communication to the Lieutenant-governor, 25 copies of a memorandum which has been submitted to us by Dr. Royle, which contains much valuable information in respect to the results of the experiments for introducing the American description of cotton into different parts of India, and for improving the indigenous cotton, and also with regard to the probability of Indian cotton entering into a successful competition with the produce of America in the English market.

8. We take this opportunity of forwarding to you, in continuation of para. 1 of our despatch dated 2d June (No. 4) 1847, copies of the account sales of the cotton shipped to us on board the vessels "Amwell" and "Monarch."

London, 20 October 1847. We are, &c.
(signed) *H. St. G. Tucker,*
J. L. Lushington,
&c. &c. &c.

Sir, London, 21 September 1847.
At your request I have examined the small specimens of cotton from Agra. The cotton is perfect as respects cleanness and colour, but the staple is short; therefore scarcely suitable for general purposes. I do not think it has been much injured in the process of cleaning; if the staple were a little longer and equal in strength to the samples, there could be no doubt, I think, of such cotton entering largely into competition with American growth, provided it could be produced in quantity. The present value of these specimens is about 6 *d.* to 6 $\frac{1}{2}$ *d.* per lb., the price of middling to fair American, which now rule $\frac{1}{2}$ *d.* per lb. lower than on the 1st instant.

Dr. Royle, &c. &c. I am, &c.
(signed) *Jas. R. Tetley.*

Revenue Department.—21 March (No. 2) 1848.

Our Governor-General of India in Council.

Cotton.

Para. 1. THE letters and paragraphs referred to in the margin* relate to the measures now in progress under the superintendence of Mr. H. H. Bell, for procuring an improved description of cotton from the North-west Provinces of the Bengal Presidency.

2. We have been advised by Messrs. Rathbone Brothers & Company of the arrival at Liverpool of the first consignment of this cotton, amounting to 1,658 bales and 5 half bales, per ships "Surat" and "Guisachen." We enclose a copy of the valuation of the cotton received by the former vessel, and also copies of the reports furnished by Mr. Bazley, chairman of the Manchester Chamber of Commerce, and Mr. Aspinall Turner, chairman of the Manchester Commercial Association. From these you will learn that the cotton, although in better condition than that usually imported from Bengal, is so deficient in staple as to be quite unfit for spinning purposes, and that it can only be disposed of at a reduced price for exportation. We have authorised Messrs. Rathbone to dispose of this cotton at any price which they can obtain, not below 4 *d.* per lb., and we shall hereafter furnish you with a copy of the account sales.

3. As

* Letter from Governor-General, dated 4 October (No. 23.) 1847; Letter, dated 18 December (No. 20.) 1847; Letter, dated 31 December (No. 22.) 1847; Narratives, North Western Provinces, dated 2 December (No. 5.) 1846, para. 28; Narratives, North Western Provinces, dated 15 March (No. 1.) 1847, paras. 47 and 48; Narratives, North Western Provinces, dated 12 May (No. 2.) 1847; paras. 44 to 46; Narratives, North Western Provinces, dated 29 June (No. 3.) 1847, para. 41.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 265

I.
Bengal and
North Western
Provinces.

3. As the shortness of staple which renders this cotton of little value in the English market is a defect which, as it appears to us, cannot be remedied by the means proposed to be adopted by Mr. Bell, we desire that the experimental measures under his superintendence may be brought to as speedy a close as possible.

4. We have just received samples of the cotton grown by Mr. Bell in the year 1847, with a letter from Mr. Thornton, Secretary to the Lieutenant-governor of the North Western Provinces, dated 14th January last. We shall obtain a report on their quality from competent persons, and forward a copy of it for Mr. Thomason's information. We have to observe that the cotton received per "Surat" is very inferior in colour and cleanness to the samples previously forwarded, of which the report of Messrs. Tetley & Sons (transmitted to you with our despatch, dated 20th October (No. 13) 1847) was founded.

London, 21 March 1848.

We are, &c.
(signed) *H. St. G. Tucker,*
J. L. Lushington,
&c. &c.

REPORT and VALUATION of COTTON per "Surat."

Landed Bales.	Mark	Description	Per lb.
2 over.	E I C	J 64 bales, fair to good fair, fully fair colour, but little dirt	d. 3 1/2
1 "	"	M 41 bales, fair, fair colour, rather leafy	3 1/2
"	"	DB 25 bales, fair, fair colour, rather leafy	3 1/2
3 short.	"	G 23 bales, fair to good fair, fully fair colour, but little dirt	3 1/2
"	"	S 21 bales, fair, fair colour, rather leafy	3 1/2
1 over.	"	T 236 bales, fair to good fair, fully fair colour, but little leaf	3 5/8
7 "	"	BC 155 bales, good fair, good colour, but little dirt	3 3/4
8 "	"	BC 280 bales, nearly good fair, good colour, but little dirt	3 5/8
19 bales over.		845 bales.	
3 bales short.			
16 bales over.		16 bales; none landed of this mark.	

This cotton appears similar to that which used formerly to be received under the name of Bengal; it is very short indeed in staple.

Liverpool, 19 February 1848.

REPORT of *Thomas Bazley*, Esq., Chairman to the Manchester Chamber of Commerce.

Chamber of Commerce and Manufactures,
Manchester, 1 March 1848.

Gentlemen,
I HAVE been duly favoured with your letters of the 21st and 29th ultimo, as well as with the samples of East India cotton to which you refer.

The staple of this cotton is so very short, poor, and insufficient, that the spinner could only apply it to the commonest and most inferior purposes, though the clear and open condition of it would render it most desirable.

If the quality were as good as the condition, this cotton would be a great boon to our important trade; but its general merits place it so much below the useful American class that it must be greatly improved before it could rank with the latter.

Messrs. Rathbone Brothers & Co. Yours, &c.
(signed) *Thomas Bazley.*

REPORT of *J. A. Turner*, Esq., Manchester.

Commercial Association, Manchester,
2 March 1848.

Dear Sirs,
I HAVE just returned from London, where I have been engaged chiefly in connexion with the subject of cotton cultivation in India; and I am compelled to set off again to-night to give evidence to-morrow before Mr. Bright's Committee.

This must account for my seeming neglect in not sending you a report on the Agra cottons. I did, however, report upon them to the Chairman and Deputy Chairman, with whom I had a long interview on Monday, and I am in such great haste to-day that I must
296—Sess. 2. L L content

I.
Bengal and
North Western
Provinces.

content myself with saying, generally, that the whole of these cottons are unsuited for spinning purposes in this country; they have not one good point about them, being of bad colour, short staple, and by no means free from dirt and stained locks of cotton. They may be sold for export, but I think they could not be sold here. If the India Company are spending money in the cultivation of such rubbish as this, they may as well give up the attempt at once.

Messrs. Rathbone Brothers & Co.
Liverpool.

Yours, &c.
(signed) J. A. Turner.

P.S.—As to value, I should think $3\frac{1}{2}d.$ to $3\frac{3}{4}d.$ about the rate, but I would not buy them at $3d.$

REPORT on the Quality of 836 Bales of Cotton landed from the "Monarch" and "Amwell," from Calcutta, imported by order of the Honourable East India Company.

THE staple is very much cut by the machine used in cleaning the cotton from the seed. The native Bengal cotton is the shortest of any grown in India, and in very limited consumption in consequence; it follows, of course, that any injury done to the staple of such renders it almost unfit for spinning even the coarsest fabrics, which is the case with the cotton now under examination; it is well cleaned from the seed; there is, however, much small leaf left in it; it is white, which is so far in its favour, but on the whole, can only be used by mixing with a better quality, or for wadding.

The present nominal value is as under; viz.

Per "Monarch,"	▽K	273 bales, very short and uneven staple, much small leaf, very few seeds, white	- - -	$4\frac{1}{2}d.$ per lb.
	▽H	133 ditto - - ditto - - ditto	- - -	" "
	▽A	70 ditto - - ditto - - ditto	- - -	" "
Per "Amwell,"		69 ditto - - ditto - - ditto	- - -	" "
	▽B	291 ditto, less cut and rather cleaner	- - -	$4\frac{1}{2}d.$ "

The cotton *ex* "Monarch" is landed in good condition, but that per "Amwell," one half of the bales are more or less damaged by sea water.

(signed) J. R. Tetley & Son.

Revenue Department, 19 July (No. 6) 1848.

Our Governor-General of India in Council.

Cotton.

Para. 1. THE letters and paragraphs referred to in the margin,* report matters connected with the cultivation of cotton in the North Western Provinces, with the exception of the experiments under the superintendence of Mr. H. H. Bell, on which subject we addressed you last on the 21st March (No. 2) 1848.

2. We forward to you herewith copies of the account, sales of the cotton shipped to us on the vessels "Amwell" and "Monarch."

3. From the papers transmitted with our Governor-general's letter of the 14th August (No. 11) 1847 it appears that the Jullundur Doab offers no peculiar advantages for the cultivation of cotton over those possessed by other districts of the North Western Provinces, and we are satisfied that it is not expedient for Government to interfere for its encouragement.

4. We forward herewith copy of the report by Messrs. Tetley & Son on the sample bale of Jullundur Doab cotton, which was forwarded to us by the Government of Bombay on the "Malacca."

5. We have perused with interest the paper furnished by Mr. H. H. Bell, (forwarded with your letter of the 25th March (No. 5) 1848), in reply to our queries regarding the extent to which India might be capable of supplying cotton in the event of an increased demand for it in Europe.

6. The information furnished in paras. 47 to 49 of the Agra narrative, dated the 12th May 1847, is interesting, as tending to show that the cultivation of cotton in Bundelcund has not fallen off, but that the increased consumption of cotton

* Public letter, dated 20 March (No. 11) 1847, para. 7; Public letter, dated 10 December (No. 51) 1847, para. 33; Public letter, dated 11 March (No. 17) 1848, para. 17; Revenue letter, dated 26 June (No. 6) 1847, para. 19; Governor-General's letter, dated 14 August (No. 11) 1847, whole; Revenue letter, dated 16 October (No. 15) 1847, whole; Revenue letter, dated 25 March (No. 5) 1848, whole; Agra Public Narrative, dated 20 October (No. 3) 1846, para. 23; Revenue letter, dated 2 December (No. 5.) 1846, para. 29 to 32; Revenue letter, dated 15 March (No. 1) 1847, para. 49 to 52; Revenue letter, dated 12 May (No. 2.) 1847, para. 43, and 47 to 50; Revenue letter, dated 29 June (No. 3) 1847, paras. 39, 40, 42 to 44; Bengal Secretary's letter, dated 5 January 1847.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 267

cotton manufacture had taken off all that was before exported, and had kept pace with the increasing import. "Every inquiry," it is stated, "went to prove that the people were more numerous than they had been, and were much better clothed."

7. With the paragraphs, noted in the margin,* are transmitted the monthly reports of the experimental cultivation of cotton in the Dacca district, under the superintendence of Mr. Price. The results hitherto obtained appear to hold out but little prospect of ultimate success, and we fear that the apprehensions which you express in your letter of the 4th September (No. 12) 1847, of the necessity of discontinuing the experiment are well founded.

8. We transmit to you herewith copy of the report of Messrs. Tetley & Son on the samples of Dacca cotton, forwarded to us per ship "Ellenborough," from which you will learn that they are of such short staple as to be unsuitable for home consumption, and only fit for wadding.

London, 19 July 1848.

We are, &c.,
(signed) *J. L. Lushington.*
A. Galloway.

I.
Bengal and
North Western
Provinces.

ACCOUNT SALES of 360 Bales Cotton, ex "Amwell," from Calcutta, on Account of the Honourable East India Company, per *J. R. Tetley & Son.*

1847: 17 June.	Bales.	Bales.	£. s. d.	£. s. d.
	△ 69, Lot 54 - - - 10 -	- 1,964 at 4½ d. per lb.	37 16 11	
	" 55 - - - 10 -	- 1,999 "	38 10 5	
	" 56 - - - 10 -	- 2,009 "	38 14 4	
	" 57 - - - 11 -	- 2,205 "	42 9 10	
	" 58 - - - 3 -	- 538 4½ d.	10 1 9	
	" 59 - - - 10 D.C.1	2,030 "	38 1 3	
	" 60 - - - 7 "	1,438 "	26 18 6	
	" 61 - - - 6 "	2,202 3½ d.	18 3 1	
	" 62 - - - 2 "	3 403 2½ d.	4 16 6	
				255 12 7
	△ 291, " 63 - - - 10 -	- 2,098 4½ d.	41 10 5	
	" 64 - - - 10 -	- 2,107 "	41 14 -	
	" 65 - - - 10 -	- 2,124 "	42 - 9	
	" 66 - - - 10 -	- 2,071 "	40 19 9	
	" 67 - - - 10 -	- 2,096 "	41 9 8	
	" 68 - - - 10 -	- 2,096 "	41 9 8	
	" 69 - - - 10 -	- 2,082 "	41 4 1	
	" 70 - - - 10 -	- 2,085 "	41 5 3	
	" 71 - - - 10 -	- 2,087 "	41 6 1	
	" 72 - - - 10 -	- 2,104 "	41 12 10	
	" 73 - - - 10 -	- 2,117 "	41 18 -	
	" 74 - - - 10 -	- 2,095 "	41 9 3	
	" 75 - - - 10 -	- 2,101 "	41 11 8	
	" 76 - - - 6 -	- 1,250 "	24 14 9	
	" 77 - - - 6 -	- 1,183 "	23 8 3	
	" 78 - - - 10 -	- 2,100 "	41 11 3	
	" 79 - - - 10 -	- 2,109 4½ d.	40 12 10	
	" 80 - - - 10 -	- 2,113 4½ d.	41 16 5	
	" 81 - - - 10 -	- 2,105 "	41 13 3	
	" 82 - - - 10 -	- 2,113 "	41 16 5	
	" 83 - - - 10 -	- 2,088 "	41 6 6	
	" 84 - - - 10 -	- 2,104 "	41 12 10	
	" 85 - - - 14 -	- 2,940 "	58 3 9	
	" 86 - - - 10 -	- 2,127 3½ d.	34 6 10	
	" 87 - - - 10 -	- 2,135 "	34 9 5	
	" 88 - - - 10 -	- 2,138 "	34 10 5	
	" 89 - - - 12 -	- 2,540 "	41 - 2	
	" 90 - - - 10 -	- 2,152 3½ d.	30 5 3	
	" 91 - - - 11 -	- 2,355 "	33 2 4	
	" 92 - - - 2 -	- 448 2½ d.	4 8 8	
	Freight, as per Account - - - - -		428 13 10	1,404 3 4
	Dock charges, 14 l. 13 s. 10 d.; 7 l. 11 s. 9 d - - - - -		22 5 7	
	Public sale do., 39 lots, at 2 s. 6 d. per lot - - - - -		4 17 6	
	Brokerage, one per cent. - - - - -		14 - 9	
				470 2 8
	Prompt, 18 September 1847 - - - - -			934 - 8

* India letter, dated 4 September (No. 12) 1847, whole; Bengal letter, dated 28 November (No. 19) 1846, para. 23; Bengal letter, dated 24 March (No. 7) 1847, para. 32; Bengal letter, dated 31 May (No. 11) 1847, para. 26; Bengal letter, dated 10 September (No. 17) 1847, para. 37 to 40; Bengal Secretary's letter, dated 27 January 1847.

PAPERS RELATING TO MEASURES TAKEN SINCE 1847

ACCOUNT SALES of 476 Bales Cotton, ex "Monarch," from Calcutta, on Account of the Honourable East India Company, per J. R. Tetley & Son.

1847:	Bales.	Bales.	£. s. d.	£. s. d.	
17 June -	△ ^K 273, Lot 1 - - -	10 - - -	2,072 at 4 ³ / ₈ d. per lb. -	37 15 5	
	" 2 - - -	10 - - -	2,086 4 ¹ / ₄ d. -	36 18 9	
	" 3 - - -	10 - - -	2,105 " -	37 5 6	
	" 4 - - -	10 - - -	2,102 " -	37 4 5	
	" 5 - - -	10 - - -	2,114 4 ³ / ₈ d. -	38 10 8	
	" 6 - - -	10 - - -	2,108 4 ¹ / ₄ d. -	37 6 4	
	" 7 - - -	10 - - -	2,085 " -	36 18 5	
	" 8 - - -	10 - - -	2,124 " -	37 12 3	
	" 9 - - -	10 - - -	2,090 4 ³ / ₈ d. -	38 2 -	
	" 10 - - -	10 - - -	2,117 4 ¹ / ₄ d. -	37 9 9	
	" 11 - - -	10 - - -	2,090 " -	37 - 2	
	" 12 - - -	10 - - -	2,122 " -	37 11 6	
	" 13 - - -	10 - - -	2,114 " -	37 8 8	
	" 14 - - -	10 - - -	2,104 4 ³ / ₈ d. -	38 7 1	
	" 15 - - -	10 - - -	2,117 4 ¹ / ₄ d. -	37 9 9	
	" 16 - - -	10 - - -	2,106 " -	37 5 10	
	" 17 - - -	10 - - -	2,100 " -	37 3 9	
	" 18 - - -	10 - - -	2,116 " -	37 9 5	
	" 19 - - -	10 - - -	2,135 4 ³ / ₈ d. -	38 18 4	
	" 20 - - -	10 - - -	2,120 4 ¹ / ₄ d. -	37 10 10	
	" 21 - - -	10 - - -	2,117 " -	37 9 9	
	" 22 - - -	10 - - -	2,107 4 ³ / ₈ d. -	38 8 2	
	" 23 - - -	10 - - -	2,096 4 ¹ / ₄ d. -	37 2 4	
	" 24 - - -	10 - - -	2,110 " -	37 7 3	
	" 25 - - -	10 - - -	2,084 4 ³ / ₈ d. -	37 19 9	
	" 26 - - -	10 - - -	2,095 4 ¹ / ₄ d. -	37 2 -	
	" 27 - - -	6 - - -	1,292 4 ³ / ₈ d. -	23 11 -	
	" 28 - - -	6 - - -	1,171 4 ¹ / ₄ d. -	20 14 9	
	" 29 - - -	1 D. C. 1. 212	4 ³ / ₈ d. -	3 12 10	
				1,024 16 8	
	△ ^H 133	" 30 - - -	10 - - -	2,048 4 ¹ / ₂ d. -	38 8 -
		" 31 - - -	10 - - -	2,027 " -	38 - 1
		" 32 - - -	10 - - -	1,989 " -	37 5 10
		" 33 - - -	10 - - -	2,047 " -	38 7 7
		" 34 - - -	10 - - -	2,053 " -	38 9 10
		" 35 - - -	10 - - -	2,014 4 ³ / ₈ d. -	38 16 3
		" 36 - - -	10 - - -	2,019 4 ³ / ₈ d. -	37 17 1
		" 37 - - -	10 - - -	2,002 " -	37 10 9
		" 38 - - -	10 - - -	2,027 " -	38 - 1
		" 39 - - -	10 - - -	1,983 " -	37 3 7
		" 40 - - -	10 - - -	2,049 " -	38 8 4
		" 41 - - -	10 - - -	2,004 " -	37 11 6
		" 42 - - -	7 - - -	1,408 " -	26 8 -
		" 43 - - -	5 - - -	940 " -	17 12 6
		" 44 - - -	1 D. C. 1 214	4 ¹ / ₄ d. -	3 15 9
	△ ^A 70	" 45 - - -	10 - - -	1,964 4 ³ / ₈ d. -	37 16 11
		" 46 - - -	10 - - -	1,978 4 ³ / ₈ d. -	37 1 9
		" 47 - - -	10 - - -	1,951 " -	36 11 7
		" 48 - - -	10 - - -	1,990 4 ³ / ₈ d. -	38 7 -
		" 49 - - -	10 - - -	1,962 4 ³ / ₈ d. -	36 15 9
		" 50 - - -	10 - - -	1,960 4 ³ / ₈ d. -	37 15 5
		" 51 - - -	6 - - -	1,166 4 ¹ / ₂ d. -	21 17 3
		" 52 - - -	3 - - -	554 4 ¹ / ₂ d. -	10 7 9
		" 53 - - -	1 - - -	202 4 ¹ / ₄ d. -	3 11 6
				764 - 1	
		Freight as per Account - - - - -		273 19 10	1,788 16 9
		Dock charges, as per bills: £.15. 8s. 4d.; £.13. 15s. 6d. - - - - -		29 3 10	
		Public sale charges, 53 lots, at 2s. 6d. - - - - -		6 12 6	
		Brokerage, 1 per cent. - - - - -		17 17 9	
				327 13 11	
		Prompt, 18 September 1847 - - - - -		£.	1,461 2 10

(Errors excepted.)

London, 17 September 1847.

(signed) J. R. Tetley & Son.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 269 .

London, 15 June 1848.

I.
Bengal and
North Western
Provinces.

REPORT on Two Bales of Cotton, *ex* "Ellenborough," Close, from Calcutta, containing Ten separate Parcels imported by the Honourable East India Company.

		Present Value.
No. 1, Bale F, Nos. 3 & 5.	Two samples, short staple, clean, good colour	3½ d. per lb.
"	4.—One sample, very short and coarse - -	2¾ d. "
D	9.—One sample, very short and coarse; a little leaf, white - - - -	3 d. "
T	8.—One sample, middling staple; a little leaf, rather high colour - - - -	3 d. "
No. 2, Bale R	1.—One sample, ditto - - - ditto - - -	3 d. "
A	6.—One sample, short staple, clean, good colour	3½ d. "
T	7.—One sample, ditto; a little leaf, ditto - - -	3 d. "
R	2.—One sample, ditto, rather inferior - - -	2¾ d. "
B	10.—One sample, fair staple, clean, and not cut -	3½ d. "

The above being generally of very short staple, are not suitable for home consumption; such like are only taken for wadding.

(signed) J. R. Tetley & Son, Brokers.

Revenue Department, 27 June (No. 4) 1849.

Our Governor-General of India in Council.

Para. 1. THE communications referred to in the margin* report the further proceedings which have been adopted with the object of improving the cultivation and preparation of cotton, principally in the North Western Provinces of the Bengal Presidency.

2. Under the instructions contained in our despatch of the 21st March (No. 2) 1848, the experiments in progress under the management of Mr. H. H. Bell, of Agra, have been discontinued. We lament the failure in which the attempt to produce from the indigenous plant an article suited to the wants of the manufacturers of this country has resulted, but we at the same time give full credit to the zeal and public spirit which has characterised Mr. Bell's exertions. We desire that when all the stock of cotton on hand shall have been disposed of, you will furnish us with a statement showing the pecuniary results of the experiment.

3. Much interesting information has been collected on the subject of the cotton cultivation and trade in Malwa, Rajpootana, and other native states, on which no particular observations are now required from us. We think, however, that the result of the inquiries instituted by Mr. Allen into the transit duties on cotton imported into Agra from foreign territories, and communicated to the Lieutenant-governor of the North Western Provinces in his letter of the 16th March 1848, should not be lost sight of. The heavy duties levied by native princes and chiefs on the transit of cotton must materially affect the trade in that article, and it would be desirable to take advantage of any suitable opportunity to induce them to place these imposts on a more moderate footing.

4. We approve the arrangements which have been made with Mr. Mather, the engineer, who has been engaged in the construction of an improved cotton-cleaning machine on the principle of the native churka, which is supposed to be peculiarly suited to the indigenous cotton, and of the success of which very sanguine

* Letter from Governor-general, dated 14 August (No. 12) 1847. Letter from Government of India, dated 5 February (No. 1) 1848; 18 March (No. 4) 1848; 25 March (No. 6) 1848; 13 May (No. 9) 1848; 4 July (No. 13) 1848; 15 July (No. 14) 1848; 12 August (No. 16) 1848; 11 September (No. 18) 1848; 11 November (No. 24) 1848, para. 14; 18 November (No. 25) 1848. Home Department, 14 August (No. 41) 1848, para. 28; 21 October (No. 56) 1848; 24 November (No. 61) 1848, para. 26. From Bengal, 13 January (No. 3) 1848, para. 32; 23 May (No. 7) 1848, para. 36. North Western Provinces Narratives, dated 15 October (No. 4) 1847, paras. 48 and 49; 20 December (No. 5) 1847, paras. 53 to 59; 16 February (No. 1) 1848, para. 39; 30 May (No. 2) 1848, paras. 47 to 58; 24 October (No. 3) 1848, 71 to 79.

I.
Bengal and
North Western
Provinces.

sanguine expectations appear to be entertained. We desire that when its merit shall have been sufficiently tested, you will furnish us with a report on the result.

5. We shall shortly forward to you, for trial in India, some machines which have been recently invented in this country, which being portable, cheap, and easily worked, are intended to be used by the cultivators in their own dwellings, and have been denominated "Cottage saw-gins."

We are, &c.
(signed) A. Galloway,
J. Shepherd,
&c. &c.

London, 27 June 1849.

Revenue Department, 13 April (No. 2) 1852.

Our Governor of the Presidency of Fort William, in Bengal.

Forwarding 200
copies of a work by
Dr. Royle on the
culture and com-
merce of cotton in
India.

WE have to acquaint you that we have forwarded by the "Plantagenet," 200 copies of a work by Dr. Royle, on "The Culture and Commerce of Cotton in India," the price of which in this country is 18s. per copy. We desire that, after retaining as many copies as you may deem necessary for the use of the public departments under your government, and that of the North West Provinces, the remainder may be sold on the public account.

(signed) J. Shepherd,
J. W. Hogg,
&c. &c.

London, 13 April 1852.

EXTRACT Agra Revenue Narrative (North West Provinces), dated 12 May, (No. 2) 1847.

Rev. Pro., Nov.
1846, Nos. 4 and 5.

44. The Lieutenant-governor ascertained from personal communication with Mr. Bell that the quantity of cotton produced by him from the fields for the cultivation of which he had made advances would be less than was expected. The operations had been commenced too late in the season to admit of the purchase of a sufficient supply of Bagchenee seed, and the yield of the fields which had been sown had turned out to be less than was at one time anticipated. The success of the enterprise was, however, supposed from the first to turn upon the possibility of procuring a sufficiently large supply of raw cotton, to enable the manufacturers in England to give it a fair trial with machinery. It became, therefore, an object to make good the deficiency by any means that might present themselves. It seemed probable that this might be effected by the purchase of Bagchenee and other superior cottons, care being taken in the selection of the article, and in securing its faithful delivery according to agreement. Instructions were accordingly issued to Mr. Allen to consider Mr. Bell authorised to purchase cotton, within the limits already prescribed, according to his discretion. The cotton so purchased would be charged for in the same way as that which had been grown upon advances, but it would be kept separate, and distinguished in the shipment by peculiar marks. Its price also in the accounts would be kept separate.

45. The operations seemed to have reached that point when it would be better that the stock belonging to the Government and the establishment hitherto maintained for the conduct of the experiment should be entirely made over to Mr. Allen for Mr. Bell's use. Instructions were accordingly issued to Mr. Jackson to make over to Mr. Allen any cotton which he might still have unshipped, together with all the machinery and implements belonging to the Government; such part of the establishment as he might not require he would make over to Mr. Allen, who would decide whether it should be retained or paid up and discharged. The cotton which Mr. Allen would receive would all be ginned; and he would leave it to Mr. Bell to decide whether it should be sold here or shipped to England, and, if the former, to sell it to the best advantage. As to the machinery, Mr. Allen was requested to cause such as might be required to be maintained, or to be removed to any other position which might

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 271

might be found more commodious for the present operations; whatever might not be required, should be stored in any convenient place, and under proper custody.

I.
Bengal and
North Western
Provinces.

46. Mr. Mackenzie not having furnished the report which was required from him of the working of the saw-gins, Mr. Jackson was requested to call upon him for that report, and also to require him to furnish any further information which Mr. Allen or Mr. Bell might require, in the event of his (Mr. Mackenzie's) services not being transferred to them.

EXTRACT from the Proceedings of the Honourable the Lieutenant-Governor of the North Western Provinces, in the Revenue Department, dated 2 November 1846.

The following letters are written:—

(No. 4688.)

No. 4.

From *J. Thornton*, Esq., Secretary to Government, North Western Provinces, Agra, to
C. Allen, Esq.

Sir,

THE Lieutenant-governor has ascertained, from personal communication with Mr. Bell, that the quantity of cotton produced by him from the fields for the cultivation of which he has made advances will be less than was expected. The operations were commenced too late in the season to admit of the purchase of a sufficient supply of Bagchensee seed, and the yield of the fields which were sown has turned out to be less than was at one time anticipated.

2. The success of this enterprise was however supposed from the first to turn upon the possibility of procuring a sufficiently large supply of raw cotton, to enable the manufacturers in England to give it a fair trial with machinery.

3. It therefore becomes an object to make good the deficiency by any means that may present themselves. It seems probable that this may be effected by the purchase of Bagchensee and other superior cottons, care being taken in the selection of the article, and in securing its faithful delivery according to agreement.

4. You will therefore be pleased to consider Mr. Bell authorised to purchase cotton, within the limits already prescribed, according to his discretion. The cotton so purchased will be charged in the same way as that which has been grown upon advances, but it will be kept separate, and distinguished in the shipment by peculiar marks; its price also in the accounts should be kept separate.

5. The operation seems now to have reached that point when it is better that the stock belonging to the Government and the establishment hitherto maintained for the conduct of the experiment should be entirely made over to you for Mr. Bell's use. Instructions will accordingly be issued to Mr. Jackson to make over to you any cotton which he may still have unshipped, together with all the machinery and implements belonging to the Government. Such part of the establishment as he may not require he will also make over to you, and you will decide whether it shall be retained or paid up and discharged. You will be pleased to have a list made of the stock which may be made over to you.

6. The cotton which you will receive will all be ginned, and you will leave it to Mr. Bell to decide whether it shall be sold here or shipped for England, and if the former, to sell it to the best advantage.

7. As to the machinery, you will cause such as may be required to be maintained, or to be removed to any other position which may be found more commodious for the present operations. Whatever may not be required should be stored in any convenient place, and under proper custody.

8. A copy of the letter addressed to the Collector is forwarded for your information.

Agra, 2 November 1846.

I have, &c.
(signed) *J. Thornton*,
Secretary to Government N. W. P.

(No. 4687.)

No. 5.

From *J. Thornton*, Esq., Secretary to Government, North Western Provinces, Agra, to
C. C. Jackson, Esq., Collector of Agra.

Sir,

I AM desired to forward, for your information and guidance, the annexed extract (para. 5) of a letter addressed to Mr. C. Allen, regarding the cotton in store, and the machinery and the establishment hitherto maintained for the conduct of the experiment.

296—Sess. 2.

L L 4

2. You

I.
Bengal and
North Western
Provinces.

2. You will be good enough to make over to Mr. Allen such cotton as you may have unshipped and all the machinery and implements connected with the works: you will decide what part of the establishment you may wish to retain for other purposes, and you will make over the remainder to Mr. Allen.

3. Mr. Mackenzie has not yet furnished the report which was required from him of the working of the saw-gins. You will be pleased to call upon him for this report, and also to require him to furnish any further information which Mr. Allen or Mr. Bell may require, in the event of his services not being transferred to them.

Agra, 2 November 1846.

I have, &c.
(signed) *J. Thornton*,
Secretary to Government N. W. P.

Home (Revenue) Department, Simla, the 1st July (No. 9) 1847.

To the Honourable the Court of Directors of the Honourable East India Company.

Honourable Sirs,

IN reference to your despatch of the 25th November last, No. 14, conveying your sanction to the experimental cotton cultivation near Agra, and desiring that the produce may be shipped to Liverpool, and consigned to Mr. W. Laird, of that city, I have the honour to transmit herewith the correspondence marginally cited*, explanatory of his Honor the Lieutenant-governor's further proceedings in the matter.

2. It appears that samples of the cotton, which it is intended to ship this year, have been already forwarded overland to the India House; and I would recommend that, as proposed by the Lieutenant-governor, your Honourable Court will not insist on the consignment of this cotton to Mr. Laird.

Simla, 1 July 1847.

I have, &c.
(signed) *Hardinge*.

EXTRACT India Revenue Narrative (North Western Provinces), dated 15 October (No. 4) 1847.

Rev. Pro., June
1847, Nos. 123 to
127; Rev. Pro.,
July 1847, No. 20.

49. A representation from Mr. Bell on the subject of the intended arrangements for disposing of his consignments was forwarded to the Supreme Government for transmission to England, together with a brief account of the contemplated operations during the current year, the details of which it is unnecessary to describe, as the whole subject will have been ere this brought to the notice of the Honourable Court.

EXTRACT from the Proceedings of the Honourable the Lieutenant-Governor of the North West Provinces in the Revenue Department, dated 12 June 1847.

No. 123.

From *H. H. Bell*, Esq. to *John Thornton*, Esq., Secretary to the Government, North Western Provinces, Agra.

Sir,

I HAVE the honour to acknowledge the receipt of your letter, No. 1094, of the 8th instant. In replying to it I request permission to advert briefly to the circumstances under which the arrangements sanctioned by the Honourable Court of Directors originated, and the understanding on which I engaged in them.

2. I had long been impressed with a perfect conviction that nothing but care and attention was requisite for the production in India of cotton sent for our home manufactories, when, nearly 10 years since, on the distribution of some American seed by the Agricultural Society of Calcutta, I entered into a series of experiments in its cultivation. The experience of several years satisfied me that it was a mistake to persevere in our unsuccessful trials with foreign seed, and I became persuaded we must, in the first instance at least, depend on indigenous descriptions; since then there is no cotton of reputed superior quality within the North Western Provinces and Oude, and particularly of the states to the south-west, of which I have not, at considerable expense, obtained the seed, and given it a fair trial.

3. The

* To Secretary North Western Provinces, No. 25, dated 30 January 1847; from Secretary North Western Provinces, No. 2517, dated 12 June 1847.

3. The result of my numerous experiments were three descriptions of cotton, sufficiently promising to induce me to ship a few bales of each to Liverpool, to ascertain their estimation in that, the most important market; and the report from thence was such as to lead me to think we were certainly in the right path, particularly as the cotton selected as suitable had become known to the ryots in my neighbourhood, and the extremely difficult task of breaking through their prejudices by any novelty no longer existed, and the introduction into general cultivation was thus comparatively easy. Perfectly aware, from the published correspondence of the Honourable Court of Directors, and from the extremely able minute of Mr. St. G. Tucker of the 17th November 1828, in the opinions expressed in which I entirely coincided, of the deep interest taken by the Honourable Court in a measure of such vast national consideration, equally important to the commerce of Great Britain and to the territories under their immediate control, I felt confident of the readiness of Government to countenance and sanction any measure which justified an expectation of successful issue.

4. It is unnecessary to recapitulate the motives which persuaded me that the intervention of Government, which I admit I do not think generally desirable in such matters, was essential to the general introduction into the Doab of that description of cotton approved in Liverpool, to replace the inferior quality at present grown. Satisfied that it was essential, I took the liberty of placing before the Honourable the Lieutenant-governor the information I had collected; and in submitting the suggestions my experience afforded, I proffered my services for the experiment, leaving all remuneration contingent on success and the pleasure of Government. Immediate personal advantage formed no part of my inducement to undertake a laborious and troublesome experiment, in which circumstances had contributed to render my co-operation not unattended with advantage. I was, and am, indifferent to the pecuniary result to myself; my ambition was to be the instrument of a measure which, if successful, would be of inconceivable value to England and India; and the only matter of any consideration with me was the understanding that the conduct of the operations confided to me should not be uninterfered with, and of these I hold the sale in England to be an essential part. I had attentively remarked that the various reports on India cotton, made by the Liverpool brokers, were entirely conflicting, and had been struck with the great discrepancy of opinion on the same sample, nor, with my commercial experience, could I be unaware how much this is frequently the result of prepossession or prejudice, and therefore I felt the utmost anxiety that the persons to whom the sale in that city was entrusted should personally be known to me, and should be those in whose power and desire to effect the favourable disposal of the consignment I felt entire confidence.

5. I may be permitted respectfully to remark, that on no other terms would I have undertaken to carry through the plan which met the concurrence of Government; and I am persuaded that it will neither be a source of surprise nor dissatisfaction to the Honourable Court that such should have been the case, or that I still adhere to this resolution with the most perfect respect. I should prefer relinquishing the charge in which I cordially engaged, rather than continue the incomplete management desired, and I adopt this determination reluctantly after attentive consideration, without the remotest idea of disparaging the gentleman whom the Honourable Court point out as the consignee. It is possible I might think, in the event of an unfavourable report from Liverpool, that but for this deviation from the original understanding a different result would have arisen; and I confess I should have imagined that the Honourable Court would have preferred an arrangement which took from me all pretext for assigning any cause for disappointment, should this occur, which might free me from responsibility. I am perfectly ready to forego all remuneration for the trouble I have taken, nor will any other feeling be mixed with the regret I experience at circumstances having created an obstacle to the progress in my hands of a great experiment, of which every additional experience leads me to think more favourably. I am persuaded his Honour will do justice to the zeal with which I have endeavoured to perform my part; and my sincerity and confidence are sufficiently evinced by the considerable personal outlay in which I engaged (nearly 8,000 rupees), for concentrating the works connected with the preparation of the cotton for the home market, solely for this object.

6. I imagine that an allusion to the proceedings that have taken place will not be considered unwarrantable or misplaced.

7. I have already laid before Government the cause which prevented me from fully availing, during the past year, of the amount sanctioned for my experiments in the introduction of the Baug Cheenee cotton into the Doabs. I should have been glad if I could have obtained seed for a more extensive operation; but the result of my limited cultivation has entirely supported my views, that this cotton may be easily introduced to replace the inferior Desee cotton of the provinces on the east side of the Jumna. The Baug Cheenee has been more than equally productive, and proved itself at least as hardy; and, which seems to me of great importance, there is no perceptible deterioration of quality as compared with the produce of the Baug Cheenee villages of the past season and from our own crop. We are now perfectly supplied with seed for the full cultivation contemplated, although I took immediate measures, as the Lieutenant-governor suggested, for the provision of seed from the Baug Cheenee estates for part of the ensuing sowings.

8. It is known to the Government that the basis of my experience of the Baug Cheenee cotton, independently of the estimation in which it is held here, is the report on its quality

I.
Bengal and
North Western
Provinces.

by a very respectable Liverpool house. But I believe I have expressed, and I wish to be distinctly understood, that I consider the quality of this only as our starting point; and, although I hold that it is of great consideration to have secured a cotton which if not desirable is still serviceable, this is but the first step. I think I have in the past year discerned amidst my cultivation two other qualities of far higher promise. The muster superior to the Baug Chenee, as in my opinion it is preferable to any New Orleans I have seen raised in this country. Under any circumstances I shall continue the cultivation of these descriptions. Of the one, I shall have 100 beegas this year, and under an average produce, seed for 4,000 beegas next year; and subsequent cultivation will be *ad libitum*, and the same progression one year later may be predicated of the other description. The plants from which the seed was taken were equally luxuriant, hardy, and productive as the Baug Chenee, and, what is of vast importance, come even earlier to maturity. I confess, however, I look much further, and am convinced that attention and exertion will do all that can be desired, and that there are scarcely any limits to the results that may be anticipated from the enlightened and comprehensive views of the Honourable Court of Directors, carried into execution by the administrative ability of their local government. The great evil in this country is the unprogressive character of the population, and it is their unexcited apathy alone that has hitherto marred its capacity of production, and, with this, limited the power of consumption of 120 millions of individuals, whose clothing is almost exclusively of the description of which the unequalled machinery and manufacturing skill of England may monopolise the supply.

9. With respect to Baug Chenee cotton, I consider it now quite established that under advance,—on which, directly or indirectly, three-fourths of the agriculture of this country is conducted,—the ryot can, on an average, contract with profit for delivering at rates which will render the Company's maund of clean cotton at 7 s. Perfectly persuaded that, without the introduction of the saw gin into general use, we should greatly risk the successful issue of our attempt to render India a source of supply for the home markets, I perseveringly insisted on the engagements being for kupas, or unseeded cotton, and pertinacious as the adherence of the natives is to their accustomed practice, my personal influence, arising from long residence, enabled me to carry my point. I consider that I have now established the system in my own neighbourhood, from whence it may be easily extended throughout the district.

10. The low prices of cotton this year, coupled with the apparent diminished production in America, led me to think it desirable to select those cottons from the native states to the westward which are in the highest repute, and bear the highest prices in this market, for the employment of such part of the surplus of the amount sanctioned for my experiment with the Baug Chenee cotton, which from want of seed had been so limited. No speculative feeling was connected with this suggestion. Its intent was to ascertain whether any of these cottons were superior to the Baug Chenee, in order that their cultivation might be attempted in the Honourable Company's territories; and the only mode of obtaining unmixed cotton, on which alone a correct judgment could be formed, was by a recurrence to the plan of growth. With advertence to the ultimate and main object to which the views of the Honourable Court were directed, the estimation in which these cottons would be held in the home market was the essential point; and from the remarks of the Liverpool house to which was consigned the shipment that led to the present experiment being made, it was evident that the full market price is never obtained for any limited samples. I therefore proposed to myself to carry the several invoices to such an extent as might be considered necessary for eliciting the true market rates, but to restrict myself absolutely to such point; and the absence of any desire to speculate is sufficiently manifested by the extent of shipments scarcely exceeding one-half of the sanctioned outlay. I cannot at the moment state precisely the quantity of cotton or the cost and charges; but it will, as nearly as may be, amount to 6,000 maunds, costing, charges included, about 54,000 rupees. On permission being obtained, I sent proper people to the most reputed local bazaars and villages, in order to procure unmixed cotton; but the result has given me none that I think equal to the Baug Chenee, and this opinion is strengthened by the fact that a small parcel of the latter cotton which came into this market was instantly taken at about 7½ per cent. higher than the rates paid for the other best reputed cottons. It may not be altogether irrelevant to remark here, nor will the matter be considered unworthy of regard by the Honourable Court of Directors, ever alive to any measure that can promote the welfare of the people committed to their charge, that under no circumstances can the proceedings sanctioned by Government fail to be attended with great benefit to the country. Even if I were mistaken in my sanguine hopes, and the ultimate aim were not reached, as I think it will be, by progressive steps, it is still something to the cultivator to replace an inferior by a superior product, and this is effected by the substitution of the Baug Chenee for the inferior cotton grown in the Doab. The same lands yield at least the same quantity, with an excess of value of from 12 to 20 per cent.

11. In a letter addressed to Mr. Allen on the 3d ultimo, and of which, I believe, a copy reached the Honourable the Lieutenant-governor, I explained how I had been prevented from availing myself of the saw gin for freeing the kupas of the past season from the seed, and had been constrained to use the native churkha. Only one gin of 60 saws was in a condition, and that not perfect, to be made use of, and my inquiry for a mechanic who could

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 275

I.
Bengal and
North Western
Provinces.

could keep these instruments in order has been unsuccessful. I retained, however, some kupas, to afford the means of comparison of the same description of cotton cleaned by the gin and churkha, and, at the suggestion of the Lieutenant-governor, I was about to cause a similar quantity of cotton to be bowed, that this mode of cleaning might also be simultaneously placed before the Liverpool brokers for their opinion. I infer from the denomination that Georgia cotton, formerly called bowed Georgia, prior to the invention of the cotton gin, was thus prepared for the English market; and I know that some trials were made from India of the suitability of bowed cotton for the home market, but they are not persevered in. Whether this arose from the expense of bowing, or any other similar cause, I am unable to say; but I suspect the extreme pressure in the bales would so mat the cotton, that it would render it less fit for English machinery.

12. I have already remarked that the whole of the cotton grown and purchased will not exceed 6,000 maunds; and I may add that more than two-thirds have arrived, and the remainder is also at hand.

13. Of the Baug Cheenee cotton from our own growth, and that purchased at Baug Cheenee, which I proposed to ship under distinct marks, I may say provision has been made of about 2,000 maunds, and the remaining quantity will be made up of different qualities obtained from Tounk, Newraee, Jhulaba, Chankoo-Sheodaspoora, Madhopore, Sillowree, Dhoulpore, Baree, Lalsoute, and some other villages and local bazaars. They are appreciated nearly as consecutively named, but the extreme difference from first to last scarcely exceeds from five to seven per cent.

14. I may here incidentally mention that the local bazaar prices of these varied from $\frac{4}{3}$ to $\frac{4}{8}$ per local maund to $\frac{7}{8}$ of the Company's maund, or 35 seers, or nearly 72 lbs. English weight. The duties and other exactions of transit through the various native states greatly add to the cost on reaching the market; but if any reasonable and general adjustment could be effected with Jeypore, Bhurtpore, and the other smaller states, it is clear the cost of production under which we should meet America would not greatly exceed $1\frac{1}{2}$ d. per lb. I should add that I have ascertained there would be little difficulty in procuring in these several localities the delivery of kupas instead of cotton; and I have laid the foundation for this, in the hope that we could render the gin generally applicable, as I think this of much consideration; for the cotton that is brought into the bazaars is extremely dirty, and the trouble and expense of rendering it comparatively fit for the home market is very heavy, and could scarcely be managed, excepting when the population was very numerous. The loss of weight in this operation is also considerable, and materially adds to the cost of a merchantable commodity.

15. The first point is certainly to render our own province the source of supply, and they will have a considerable advantage over the states to the westward in the diminished cost of transport to a navigable river. But this can only be effected gradually; and if the present price is remunerating to the ryots in the Jeypore and westward states, and their best descriptions of cotton are suitable, if properly cleaned, there would certainly be considerable advantage in an early resumption of our relinquished trade in cotton, as will attract practical attention to the subject. On this account I directed the provision of 600 maunds of Newaree kupas, in order to ascertain if picking from it the fragments of dried leaf and pods, and other impurities, might not be effectually accomplished at a moderate expense prior to passing it through the gin, so that perfectly clean cotton of the best reputed description might reach the home market. My views, as regards the interference of Government in this, are entirely confined to this trifling experiment, which, if it should succeed, will remove all doubt as to the desirableness of the introduction of the saw gins into this country.

16. I shall only further add, that my zeal is unabated, and that nothing could afford me higher gratification than to be in anywise instrumental in carrying out the views of Government. I have from the first maintained that, formidable as competition may be with America—and I am by no means insensible to the difficulty of contesting with them the markets they have occupied—the struggle is not hopeless. It is possible that the reported diminished production in America is the result of reduced cultivation consequent on the extremely low prices that have latterly prevailed; for the capacity of America to maintain a cultivation equal to the local and export demand must not be measured by the cost of production on the luxuriant banks of the Mississippi. We hear much, and probably in many cases very justly, of the boundless plains in which the cultivation may be pursued with all the advantage of a virgin and untaxed soil; but the statistical information afforded by Ure in his work on cotton offers no very exuberant general average productions, and he strikingly remarks the besetting sin of agricultural statements is their exaggeration. It seems to be forgotten that interminable plains are valueless, unless the power of availing of their fertility by cultivation exists; that the difficulty of breaking up new land is extreme; that the population is limited; that in the southern states cotton has in some degree been an enforced cultivation, and may not unlikely be partially relinquished for others, as a consequence of our altered tariff. Above all, it must be remembered that it is slave-labour, necessarily limited; whilst, if this were susceptible of indefinite increase, it would probably only hasten the catastrophe impending over the cotton-cultivating states of the South, from their determined hostility to the growing spirit of opposition to slavery which characterises the present age. Moreover, instead of cowering before American vigour and enterprise,

I.
Bengal and
North Western
Provinces.

which has certainly left no natural advantage unavailed of, which has superadded to these the creation of science, why should we not profit by the example of their activity and intelligence, and meet our rivals with all the advantages their industry has taught us? Whilst we might easily appropriate much that they have called out into existence for facilitating their commercial operations and remedying the high price of labour in their country by steam-boats and railways, we have the vast advantage of a numerous labouring class, capable of rendering great exertions if properly managed, submissive to authority, and at rates of wages less than half the interest of the cost of a slave, setting aside all considerations of food, clothing, and every casualty; to which the latter is necessarily subject.

I am persuaded that the resources of India are yet unknown, and it would be a source of the highest pride to me to concur in the development of any part of them; but I feel that to be useful I must be unfettered, and nothing but this conviction had led me to object to the alteration desired by the letter now replied to.

Agra, 26 March 1847.

I have, &c.
(signed) *H. H. Bell.*

The following letters are written:—

(No. 2518 of 1847.)

No. 124.

From *A. Shakespear*, Esq., Assistant Secretary to Government, North Western Provinces, Agra, to *H. H. Bell*, Esq.

Sir,

Revenue Department.

THE Honourable the Court of Directors having, as already stated in Mr. Thornton's letter to you, dated 8 March last, sanctioned the experimental cultivation of cotton under your superintendence, I am now desired to communicate to you the wishes of the Honourable the Lieutenant-governor regarding the operations of the agricultural year now commencing.

2. This cultivation and outlay will correspond with that which was contemplated last year, the extent to be cultivated not exceeding 10,000 beegas, and the total outlay necessary for bringing the cotton into the English market not being more than 1,32,000 rupees.

3. No cotton is to be purchased this year, and none shipped on the account of the Government, except that which has been grown under contract with you, and from seed which you have furnished or approved.

4. The charge of Mr. Mather's services, as well as the cost of ginning over and above that which would have been incurred for cleaning with the churkah, will not be debited to the experiment.

5. The profit on this transaction, after replacing, without interest, the sums advanced, shall be paid over to yourself.

6. It is evidently desirable that the accounts of the season now commencing should be kept distinct from those of the season which has closed. The Lieutenant-governor will be glad to receive from you an account of the disbursements on account of the last season, and of the cotton now under shipment, as well as an estimate of the charge which will be incurred before the cotton can come into the market at Liverpool.

7. I am desired to take this opportunity of acknowledging the receipt of your letter of 26 March last, and of informing you that a copy of it is under despatch to the Honourable the Court of Directors.

Head Quarters, 12 June 1847.

I have, &c.
(signed) *A. Shakespear*,
Secy. to Govt., N. W. P.

No. 125.

(No. 2517 of 1847.)

From *A. Shakespear*, Esq., Assistant Secretary to Government, North Western Provinces, to *H. M. Elliot*, Esq., Secretary to the Government of India with the Governor-General.

Sir,

Revenue Department.

I AM desired with reference to the orders of the Honourable Court of Directors in despatch No. 14, dated 25 November 1846, on the subject of the experimental cotton cultivation near Agra, a copy of which was forwarded with your letter, dated 30th January last, to request that copies of the documents noted in the margin* may be laid before the Right Honourable the Governor General.

2. It

* Letter to Mr. H. H. Bell, dated 8 March 1847, No. 1094. Letter from Mr. H. H. Bell in reply, dated 26 March 1847. Letter to Mr. H. H. Bell, dated 12 June 1847, No. 2518. Letter to Mr. C. Allen, dated 31 May 1847, No. 2294.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 277

I.
Bengal and
North Western
Provinces.

2. It will be perceived that sanction was given to the experiment too late in last year to admit of the extension of the cultivation in the degree at first contemplated. Mr. Bell was therefore allowed to purchase sufficient quantities of the best cotton in the native markets, to admit of a fair opinion being formed in England on their merits. The total quantity grown and purchased will not exceed 6,000 maunds, costing, charges included, about 54,000 rupees. Of this about 2,000 maunds are Baug Cheenee, of our own growth and purchased; and it will be observed that this is superior to the other sorts purchased from foreign states inland. Baug Cheenee is the chief town of Pergunah Kurha, which lies between the Chumbul and Koohari Rivers, in the Gwalior territory, on the right of the road from Agra to Bombay, immediately after crossing the Chumbul at Dholepore. The cotton is of a superior quality, and apparently well suited for cultivation in the Doab.

Specimens of all the sorts of cotton which will be shipped this year have been sent overland to the Secretary to the India House.

3. The Lieutenant-governor, whilst he was at Agra, repeatedly visited the premises which Mr. Bell has purchased at his own expense in the city of Agra, for storing, cleaning, and pressing the cotton. The expenditure on account of these premises has been little short of 8,000 rupees. The operations were pursued there vigorously and carefully.

4. Every exertion is making to adopt the ginning apparatus to the cotton of the country, but hitherto without much success. The services of an engineer (Mr. Mather), have now been secured in the room of Mr. Mackenzie, and efforts will not be relaxed to secure this important end.

5. It is hoped that the Honourable Court will not object to permitting Mr. Bell to make his own arrangement for disposing of the cotton in Liverpool. It will be seen that it is a feature of the proceedings to which he attaches considerable importance.

6. An outlay for the year now commencing has been sanctioned similar to that which was contemplated last year. This expenditure will not be requisite beyond the next year at the utmost. A memorandum is added in the margin* of the disbursements on account of the cotton experiment in these provinces, as far as can be gathered from the Agra accounts from the first commencement in 1842-43, up to December 1846.

7. The Lieutenant-governor trusts that these proceedings will meet with the approbation of the Right Honourable the Governor-general, and that the documents now forwarded may be transmitted to the Honourable the Court of Directors, with the benefit of his Lordship's support and recommendation in their favour.

I have, &c.
(signed) A. Shakespear,
Assist. Secy. to the Govt., N. W. P.

Head Quarters, 12 June 1847.

(No. 2519 of 1847.)

No. 126.

From A. Shakespear, Esq., Assistant Secretary to the Government, North West Provinces, Agra, to C. Allen, Esq., Civil Service.

Sir,

I AM desired to forward for your information the accompanying copy of a letter this day addressed to H. H. Bell, esq., on the subject of the experimental cultivation of cotton during the season which is now commencing.

2. The

* The Expenditure in the North Western Provinces on account of the Cotton Experiment :

	1842-43.	1843-44.	1844-45.	1845-46.	May to December 1846.	TOTAL.
Salaries and Allowances of—	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Capt. Bayles, the Superintendent - - -	1,887	195	-	-	-	2,082
The American planter - - - - -	27,281	8,725	10,986	2,869	-	39,861
Messrs. Frost & Mackenzie - - - -	380	2,880	3,025	3,788	1,380	11,453
Establishment - - - - -	6,059	5,120	4,242	2,579	1,485	19,485
Price of stores supplied from the magazine - - -	-	8,066	-	-	-	8,066
Price paid for the purchase of cotton, and freight to Calcutta - - - - -	-	-	-	18,550	19,026	37,576
Contingencies, building gin-houses, &c. - - -	45,886	15,086	7,224	7,862	4,906	80,964
TOTAL Expenditure shown in the	71,493	40,072	25,477	25,648	26,797	1,99,487
Books - - - - -	-	-	-	-	-	-
Deduct Sums carried to the credit of experiment - - - - -	- nil -	1,185	- nil -	1,675	4,465	7,325
NET EXPENDITURE - - - Rs.	71,493	38,887	25,477	33,973	22,332	1,92,162

I.
Bengal and
North Western
Provinces.

2. The officiating Accountant has been desired to hold at your disposal the same sum as last year.

3. With reference to para. 6, I am desired to request that you will afford Mr. Bell such assistance as he may need in the preparation of the accounts. It is desirable that in the accounts for the season just passed, the expense of establishment entertained for ginning, which is not to be charged against the experiment, should be kept distinct from the other items, so that there may be no difficulty at any time in determining what is the cost price of the cotton shipped for England.

Head Quarters, 12 June 1847.

I have, &c.
(signed) A. Shakespear,
Assist. Secy. to the Govt., N. W. P.

No. 127.

(No. 2520 of 1847.)

From A. Shakespear, Esq., Assistant Secretary to the Government, North Western Provinces, Agra, to the Officiating Accountant, North Western Provinces, Agra.

Revenue Department.

Sir,

I AM desired to forward for your information the annexed copy of a letter this day addressed to Mr. Allen, and to request that you will hold at Mr. Allen's disposal for the experimental cultivation of cotton the same sum during the year now commencing, as you did last year.

Head Quarters, 12 June 1847.

I have, &c.
(signed) A. Shakespear,
Assist. Secy. to the Govt., N. W. P.

EXTRACT from the Proceedings of the Honourable the Lieutenant-Governor of the North Western Provinces, in the Revenue Department, dated 3 July 1847.

No. 20.

From Mr. H. H. Bell to A. Shakespear, Esq., Assistant Secretary to the Government, North Western Provinces, Agra.

Sir,

I HAVE had the honour to receive your letter of the 12th instant, intimating to me the desire of the Honourable the Lieutenant-governor as regards the operations of the agricultural year now commencing, with reference to the experimental cultivation of cotton sanctioned by the Honourable Court of Directors, as communicated to me in Mr. Secretary Thornton's letter of 8th March last.

2. I observe that the cultivation and outlay are to correspond with those which were contemplated last year.

3. That no cotton is to be purchased for account of the Government save that which is grown under contract, from seed provided or approved by me.

4. That the charge of Mr. Mather's services, as well as the cost of ginning, over and above that which would have been incurred from cleaning with the churka, will not be debited to the experiment.

5. That the profit on this transaction, after replacing, without interest, the sums advanced, shall be paid over to me.

6. That it is the desire of his Honour the Lieutenant-governor that the account of the ensuing season's operation be kept distinct from those of that now nearly past, and that an account of the disbursements attending these, the quantity of cotton despatched, and an estimate of charges that may be incurred before the cotton comes into market at Liverpool, should be rendered as early as practicable.

7. In reply, I beg you will do me the honour to express to the Honourable the Lieutenant-governor my high sense of the liberality and confidence the arrangement displays, and that you will assure his Honour of my zealous effort in carrying his wishes into execution; every preparatory step that occurred to me has been taken; many engagements have been entered into; and I trust that the whole of the seed provided will be made use of.

8. The accounts of current transactions shall be made up and closed as desired by his Honour. I am afraid this can hardly be done before all July, as we have been thrown back by an unsuccessful attempt of mine to supersede the necessity of rescrowing the bales in Calcutta by performing this here, after the cotton, by continued pressure, had lost part of its elasticity. The saving is of such great importance that this must be managed, nor shall I be deterred from further trial, though the whole of my screws gave way, and subjected me to a loss of some hundred rupees. Two of these are now replaced, and I expect that in all this month the whole of the cotton for the English market will be despatched from Agra.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 279

It will then require a short time to clear off the remainder, and dispose of the refuse cotton; but the whole shall be completed in July, and past seasons' accounts closed and accounts rendered.

I.
Bengal and
North Western
Provinces.

Agra, 11 June 1847.

I have, &c.
(signed) H. H. Bell.

No order.

(True extracts.)

(signed) W. Blackburn, Reporter of Proceedings.

EXTRACT from Revenue Narrative, No. 5, dated 20 December 1847.

COTTON EXPERIMENT.

Para. 59. Mr. Allen having submitted, with his remarks, the accounts connected with Mr. Bell's experimental investment of cotton, sanctioned last year, his Honour, in forwarding the papers for communication to the Honourable Court, observed that the consignment would be received in Calcutta at an expense of $3\frac{1}{2}$ d. the lb., but the cost of the home-grown cotton would be, landed in Liverpool, at $4\frac{1}{2}$ d. and $3\frac{1}{2}$ d. per lb. With reference to the representations contained in the Lieutenant-governor's Minute of August 10th last, regarding the transit duties in Rajpootanah, it would be seen from Mr. Allen's report that these duties amount to 20 per cent. on the price of all cotton imported across the north-western frontier. Further details would be required and hereafter submitted on this subject.

Accounts of the
experimental in-
vestment in Jun
and July. Rev.
Pro., September
1847, Nos. 195 t
200.

EXTRACT from the Proceedings of the Honourable the Lieutenant-Governor of the North Western Provinces, in the Revenue Département, dated 30 September 1847.

From Charles Allen, Esq., Civil Service, to John Thornton, Esq., Secretary to the Government, North Western Provinces.

No. 195.

Sir,

I HAVE the honour to submit, for the information of the Honourable the Lieutenant-Governor, the accounts of the expenditure incurred in the cotton experiment sanctioned last year, drawn out and prepared by Mr. Hamilton Bell.

Revenue Depart
ment.

2. His Honour is aware that, in consequence of the impossibility of procuring a sufficiency of good indigenous seed, particularly the sort called Bagcheenee, Mr. Bell bought at large cotton marts, about 150 miles to the west and south-west of Agra, several parcels of cotton wool.

3. Mr. Bell was desirous of sending to England several descriptions, that their qualities and values might be ascertained from experienced commercial men in England, and by the prices realised.

4. Each description has been kept separate and carefully marked, and there will be no difficulty in cultivating those most approved of.

5. The cotton was bought privately, without any extraneous aid, and in the regular course of trade, so the prices and results are in every case real.

6. When Mr. Bell became aware that his agents had purchased more cotton in the several marts than he wished, and more than was deemed necessary for the satisfactory solution of the experiment, he took over to his own private account several parcels as they arrived. These were never picked nor cleaned, but were sent in their first state for sale to Mirzapore.

7. The parcels thus taken were inferior, and consequently cheaper, the average price of Mr. Bell's being Rs. 7. 7. 9 a maund, while that of the Government cotton is Rs. 8. 0. 11 a maund; the details are given in the accounts now submitted. I may mention that Mr. Bell has told me that he gained about 4,000 rupees by the re-sale.

8. The first price has been much enhanced by the carriage to Agra, but more by the duties levied by the native chiefs through whose territories the cotton has been brought. Should his Honour desire it, Mr. Bell will submit copies of the invoices, which will exhibit the most minute details for each parcel of cotton. I have not struck an average of these expenses, but I think the duties not less than 20 per cent. on the first price.

9. After arrival at Agra, all the cotton was most carefully picked, beat, and cleaned, and then half-pressed with Mr. Bell's screws. There were no screws at Agra, but Mr. Bell, with his usual energy, bought three screws at Futtyghur, brought them over here, purchased godowns, repaired them, and set up his screws, which were then used for the Government cotton.

10. We had a Government Atlas cotton press, but that has been proved inadequate for even half-pressing cotton. I myself saw, at Humeerpore, some of these presses break with
296—Sess. 2. M M 4 about

I.
Bengal and
North Western
Provinces.

about 250 lbs. of cotton to the bale, and consequently 200 lbs. of cotton only has latterly been pressed in each bale. It was very desirable to have the full usual weight of 300 lbs., so I gladly accepted Mr. Bell's offer of screwing the bales at two rupees each, he providing the gunny covering, rope, and labour.

11. This price may be deemed high, but Mr. Bell kept the greater part of the cotton in his godowns, round the screws, where also the cotton was chiefly cleaned, so that in fact two rupees a bale included godown rent; and even if the price be excessive it is an error on the right side in an experiment showing the price at which good Indian cotton can be supplied to the English manufacturer.

12. It would be superfluous to explain the trouble taken by Mr. Bell to pick and clean the cotton wool after its arrival from the interior to his Honour, who so frequently visited Mr. Bell's godowns while the process was going on, but it may be satisfactory to state that the expense latterly was reduced half, through the expertness gained in practice by the pickers.

13. The cotton purchased in the interior was, with a very trifling exception (17 maunds), all separated from its seed before it came to market, and the major part of that grown by Mr. Bell was also cleaned in the native way by their rude churkees. The saw gin was tried in several ways, and with different rates of speed, but in every case the cotton fibre appeared injured. The total quantity thus cleaned is 17 bales, and they are marked with a G.

14. Mr. Bell bowed 50 bales of cotton at an expense of 201 rupees. The bowing process undoubtedly frees the wool most effectually from leaves and other foreign matter; but doubts exist whether the process injures the wool or not, which this experiment may solve, as the bales are specially marked with a B. below the other letters.

15. The quantities of each description, with the price of each parcel on delivery at Agra, as also the minutiae of all other expenses up to arrival in Calcutta, are detailed in these accounts.

16. The cotton grown under Mr. Bell's personal superintendence was 619 maunds, and he bought at Tonk, 2,035 maunds; at Bagcheenee, 1,135 maunds; at Chatsoo (30 miles north of Tonk), 865 maunds; at Chowreea Newaee, in the same direction, 816 maunds; and at other neighbouring marts, 1,041 maunds, making a total of 6,561 maunds, at an expense of 52,875 rupees.

17. By cleaning this cotton was reduced to 5,932 maunds, and the refuse having been sold, the first price was reduced to 49,629 rupees; this amount should be still further reduced by 2,801 rupees, value of seed supplied to cultivators this year, and other amounts to be recovered, leaving the first net price 46,828 rupees. The expenses are 17,833 rupees, which may be divided under the following heads:

	Rs.	a.	p.
Sundry disbursements not included in the several invoices, but incurred before the arrival of the cotton at Agra - - - - -	529	1	6
Picking, threshing and cleaning the cotton - - - - -	4,202	9	6
Servants' wages for superintendence - - - - -	892	7	-
Bowing and experiments - - - - -	201	6	-
Miscellaneous items, including stowage of bales, weighing, &c. - - - - -	1,460	13	3
Pressing bales at 2 rupees each - - - - -	3,250	-	-
Boat-hire to Calcutta, freight charges - - - - -	4,218	2	-
Insurance to Calcutta - - - - -	3,279	11	-
TOTAL - - - - -	Rs. 17,833	2	3

Total cost of cotton to Calcutta - - - Rs. 64,661. 10. 8.

18. The expenses are extremely heavy, particularly that of cleaning the cotton and the insurance charges, both of which may, I think, in future years be diminished.

19. I have drawn out an abstract from Mr. Bell's accounts, to show in one view the total expense to Calcutta of each description of cotton, detailing the several expenses, and calculating the cost per lb. in English money, and per bale in Indian money. The average price is $3\frac{7}{8}d.$ per lb., and I imagine $1d.$ more will fully cover the remaining charges, so that the cost in Liverpool will be under $4\frac{1}{2}d.$ per lb.

20. In conclusion, I have only to report that the cotton left this by water on different dates, between June 6th and July 19th, but I have not yet heard of its arrival in Calcutta.

Agra, 22 Sept. 1847.

I have, &c.
(signed) C. Allen, Civil Service.

(No. 196.)

STATEMENT of Cotton purchased for account of Government Cotton Experiment, under Sanction of the Honourable the Lieutenant-Governor North Western Provinces.

	No.	M.	s.	c.	Rs.	a.	p.	Rs.	a.	p.
TOTAL, as per Particulars at Foot - - -	-	10,050	33	4	-	-	-	79,003	14	-
Bag Cheenee, grown at Oomur Ghur, &c. as per invoice - - -	-	619	6	4	6,773	14	3			
Ditto - imported as per invoice - - -	1	411	8	12	3,188	2	-			
Ditto - ditto - - - - -	2	99	23	4	772	13	-			
Ditto - ditto - - - - -	3	337	20	0	2,693	1	6			
Ditto - ditto - - - - -	4	112	27	0	895	10	-			
Ditto - ditto - - - - -	5	72	2	8	584	15	-			
Ditto - ditto - - - - -	6	92	1	4	745	11	9			
Tonk - ditto - - - - -	1	131	0	0	933	10	9			
Ditto - ditto - - - - -	2	324	21	0	2,349	11	-			
Julaha - ditto - - - - -	3	124	39	4	956	12	6			
Tonk - ditto - - - - -	4	659	38	12	4,803	8	3			
Julaha - ditto - - - - -	5	135	28	8	1,053	-	6			
Chowreea Newaee - ditto - - - - -	6	328	8	0	2,534	-	1			
Tonk - ditto - - - - -	7	570	24	6	4,272	6	3			
Sheodaspoor - ditto - - - - -	8	104	39	12	843	6	11			
Tonk - ditto - - - - -	9	222	39	3	1,677	5	3			
Ditto - ditto - - - - -	10	379	34	10	2,901	8	9			
Chowreea Newaee - ditto - - - - -	11	227	1	7	1,767	15	-			
Bansko - ditto - - - - -	12	96	2	12	772	2	6			
Tonk - ditto - - - - -	13	204	8	2	1,572	2	-			
Bansko - ditto - - - - -	14	90	29	0	740	4	6			
Chowreea Newaee - ditto - - - - -	15	154	0	1	1,177	8	5			
Bansko - ditto - - - - -	16	169	5	10	1,355	10	6			
Jeypoor - ditto - - - - -	17	229	15	13	1,866	10	9			
Tonk - ditto - - - - -	18	245	12	0	1,946	8	5			
Ditto - ditto - - - - -	19	97	38	0	768	10	-			
Bansko - ditto - - - - -	20	89	38	0	734	-	3			
Tonk - ditto - - - - -	21	152	39	4	1,215	6	3			
Chowreea Newaee - ditto - - - - -	22	101	2	0	790	13	3			
Tonk - ditto - - - - -	23	112	17	13	907	-	3			
Ditto - ditto - - - - -	24	437	25	9	3,940	14	-			
Chatsoo - ditto - - - - -	25	98	23	15	789	5	-			
Ditto - ditto - - - - -	1	104	7	4	780	8	-			
Ditto - ditto - - - - -	2	228	28	8	1,738	8	-			
Ditto - ditto - - - - -	3	324	2	4	2,504	4	3			
Ditto - ditto - - - - -	4	109	24	1	899	6	-			
Tonk - ditto - - - - -	1	237	21	4	1,898	-	3			
Madapoor - ditto - - - - -	1	81	30	14	605	2	3			
Ghurkehra - ditto - - - - -	2	111	17	12	805	14	9			
Madapoor - ditto - - - - -	3	78	27	4	577	14	3			
Silowree - ditto - - - - -	4	90	17	7	654	15	3			
Dholpoor Baree - ditto - - - - -	5	99	14	2	723	2	6			
Boree - ditto - - - - -	6	284	16	15	2,056	14	6			
Subsout - ditto - - - - -	7	276	37	11	2,002	12	-			
Ditto - ditto - - - - -	8	70	2	4	506	10	-			
Ditto - ditto - - - - -	9	425	20	5	3,077	2	9			
Ditto - ditto - - - - -	10	277	17	14	2,006	6	3			
Bag Cheenee kupas, 46, 25; cleaned, 30, 34 - - -	-	10	8	8	179	14	3			
Chowreea kupas - - - - - 23, 19 - - -	-	6	37	2	111	13	11			
		10,050	33	4				79,003	14	-
Transferred to Mr. H. Hamilton Bell - - - - -	-	3,489	9	10	26,128	10	8			
Remains for account of Government - - - - -	-	6,561	23	10	52,875	3	4			
		10,050	33	4				79,003	14	-
DISPOSAL:										
Shipped to Calcutta, as per particulars, 1,625 bales, each 300 lbs. net weight - - - - -		5,932	21	8						
Sold refuse cotton - - - - -		686	36	10						
		6,629	18	2						
Gain in Weight - - - - -		57	34	8						
		6,561	23	10						

* Ninety-one maunds of wool from this invoice were erroneously designated Tonk cotton, and became a part of the 494 bales marked T.

PAPERS RELATING TO MEASURES TAKEN SINCE 1847

<i>M. s. c.</i>		<i>Rs. a. p.</i>	
Cost of 6,561 23 10	as per above account	- - - - -	52,875 3 4
686 36 10	sold per net (refuse)	- - - - -	3,245 10 10
5,932 21 8	to Calcutta, first cost	- - - - -	49,629 8 5
6,629 18 2		<i>Rs.</i>	52,875 3 4
First cost of 1,625 bales of cotton sent to Calcutta for shipment to Liverpool		*	
for sale on account of Government		- - - - -	49,629 8 5
Charges on same, including boat-hire and insurance, &c.		- - - - -	17,833 2 3
		<i>Co.'s Rs.</i>	67,462 10 8
From this should be deducted,—			
Balance due on Oomur Ghur, &c. outlay passed as cash allowance or suttahs		- - - - -	1,301 - -
of this year, and for which credit is given to Government as cash		- - - - -	1,100 - -
Seed from last year's kupas sold to ryots for this year's cultivation		- - - - -	400 - -
Sundries, as old bags, tact, and remaining on hand, estimated at		- - - - -	
		<i>Rs.</i>	2,801 - -

The drawback on export will scarcely pay the Calcutta charges, if they do more than additionally pass the bales to which they have been restricted, unless fresh package is indispensable.

(E. E.)

(signed)

H. Hamilton Bell,

Agent Cotton Expt. of Govt., N. W. P.

Oomur Ghur, 7 September 1847.

SPECIFIC APPROPRIATION OF INVOICES PER CONTRA.

For Shipment to England for Account of Government.				Transferred to Mr. H. H. Bell.			
	<i>M. s. c.</i>	<i>Rs. a. p.</i>			<i>M. s. c.</i>	<i>Rs. a. p.</i>	
Bag Cheenee, Oomur Ghur, &c.	-	619 6 4	6,773 14 3	Tonk, inv.	4	659 38 12	4,803 8 3
Ditto imported invoice	1	411 8 12	3,183 2 -	" part of, inv.	7	350 5 8	2,626 - -
	2	99 23 4	772 13 -	" part of "	10	183 37 14	1,405 11 -
	3	337 20 0	2,693 1 6	Baskho	13	204 8 2	1,572 2 -
	4	112 27 0	895 10 -	Tonk	16	169 5 10	1,355 10 6
	5	72 2 8	584 15 0	Jeypore	17	229 15 13	1,866 10 9
Tonk	6	92 1 4	745 11 9	Tonk	18	245 12 0	1,946 8 5
"	1	131 0 0	933 10 9	"	19	97 38 0	768 10 -
"	2	324 21 0	2,349 11 -	"	20	89 38 0	734 - 3
Julaha	3	124 39 4	956 12 6	Boree	6	284 16 15	2,056 14 6
"	5	135 28 8	1,053 - 6	Subsout	7	276 37 11	2,002 12 -
"	6	328 8 0	2,534 - 1	"	8	70 2 4	506 10 -
Chowreea Newaee	7	220 18 11	1,646 6 3	"	9	425 20 5	3,077 2 9
Tonk, part of	8	104 39 12	843 6 11	" part of "	10	202 12 12	1,406 6 3
Sheodaspoor	9	222 39 3	1,677 5 3				
Tonk	10	175 36 12	1,495 13 9				
" part of	11	227 1 7	1,767 15 -				
Chowreea Newaee	12	96 2 12	772 2 6				
Bansko	14	90 29 0	740 4 6				
"	15	154 0 1	1,177 8 5				
Chowreea Newaee	21	152 39 4	1,215 6 3				
Tonk	22	101 2 0	790 13 3				
Chowreea Newaee	23	112 17 13	907 - 3				
Tonk	24	437 25 9	3,490 14 -				
"	25	98 23 15	789 5 -				
Charsoo	1	104 7 4	780 8 -				
"	2	228 28 8	1,738 8 -				
"	3	324 2 4	2,504 4 3				
"	4	109 24 1	899 6 -				
"	1	237 21 4	1,898 - 3				
Tonk	1	81 30 14	605 2 3				
Madhoopoor	2	111 17 12	805 14 9				
Ghur Kehra	3	78 27 4	577 14 3				
Madhoopoor	4	90 17 7	654 15 3				
Silowree	5	99 14 2	723 2 6				
Dholpoor Baree	10	75 5 2	600 - -				
Subsout, part of	-	10 8 8	179 14 3				
Bagcheenee from kupas	-	6 37 2	111 13 11				
Chowreea Newaee from kupas	-						
		6,561 23 10	52,875 3 4			3,489 9 10	26,128 10 8

COTTON Grown and Purchased; and Disposal.

Description.	Quantity			Retained for Government.	Bowed Bales.	Cotton.		Bales Ginned.	Bales Bowed.	Ginned Cotton.	Bowed Cotton.	Cotton Refuse.	TOTAL.
	M. s. c.	M. s. c.	M. s. c.			No.	M. s. c.						
Boree	284 16 15	284 16 15	- - -	-	-	-	-	-	-	-	-	-	284 16 15
Oomur Ghur	619 6 4	- - -	619 6 4	148	450 12 8	14	-	51 7 4	-	27 16 8	-	-	619 6 4
Bag Cheenee	1,135 11 4	- - -	1,135 11 4	272	993 0 4	3 4	10 32 12	14 17 0	117 1 4	-	-	-	1,135 11 4
Tonk	3,868 39 2	1,741 20 4	2,127 18 14	494	1,803 15 8	- 26	-	94 36 8	229 6 14	-	-	-	3,868 39 2
Chatoo	865 6 1	- - -	865 6 1	215	784 36 8	-	-	-	-	80 9 9	-	-	865 6 1
Madhoopoor	160 18 2	- - -	160 18 2	40	146 1 8	-	-	-	-	14 16 10	-	-	160 18 2
Ghurkehra	111 17 12	- - -	111 17 12	28	102 9 0	-	-	-	-	9 8 12	-	-	111 17 12
Silowree	90 17 7	- - -	90 17 7	21	76 26 12	-	-	-	-	13 30 11	-	-	90 17 7
Dholpoor Baree	99 14 2	- - -	99 14 2	25	91 12 0	-	-	-	-	8 2 2	-	-	99 14 2
Subsout	1,049 38 2	974 38 0	75 5 2	-	- - -	- 20	-	73 1 0	2 4 2	-	-	-	1,049 38 2
Julaha	260 27 12	- - -	260 27 12	62	226 14 0	-	-	-	-	34 13 12	-	-	260 27 12
Chowreea Newace	725 9 6	- - -	725 9 6	183	668 4 0	-	-	-	-	57 5 6	-	-	725 9 6
Sabazpoora	104 39 12	- - -	104 39 12	25	91 12 0	-	-	-	-	13 27 12	-	-	104 39 12
Baskho	445 25 6	259 3 10	186 31 12	45	164 13 0	-	-	-	-	22 18 12	-	-	445 25 6
Jeypore	229 15 13	229 15 13	- - -	-	- - -	-	-	-	-	- - -	-	-	229 15 13
	10,050 33 4	3,489 9 10	6,561 23 10	1,558	5,687 37 0	17 50	62 0 0	182 24 8	629 2 2	-	-	-	10,050 33 4

Boats.	Manjee.	Churrundar.	Date of Despatch.	Mark.	Bales.	Cotton.	No. Policy.	Amount Insured with Union Insurance Company
1	Gunga	Sitaram	6 June	BC	145	Oomur Ghur	67	Rs. a p. 6,380 - -
1	Beharee	Bhoop Sing	"	T	235	Tonk	68	10,130 - -
1	Baroodin	Kisson Sing	"	CC B	272	Bag Cheenee	69	11,730 - -
1	Mura	Rutty Ram	"	J	62	Julaha	71	8,190 - -
"	"	"	"	M	40	Madapoor		
"	"	"	"	DB	25	Dholpoor		
"	"	"	"	G	26	Ghurkehra		
"	"	"	"	SX	21	Silowree		
"	"	"	"	BC G	16	Bag Cheenee, ginned		
"	"	"	"	G	146 1 8			
1	Soobna	Ahmud Ally	7 July	CS	215	Charsoo	74	9,270 - -
1	Singun	Nisoor Ally	"	C	183	Chowreea	75	8,970 - -
"	"	"	"	S	25	Shabazpoor		
1	Blickka	Koondun Sing	19 July	T	186	Tonk	77	8,190 - -
"	"	"	"	BC B	4	Bag Cheenee, bowed		
"	"	"	"	T	73	Tonk		
1	Battola	Lal Khan	"	BK	45	Backoowa	79	7,200 - -
"	"	"	"	G	2	Ghurkehra		
"	"	"	"	BC G	1	Bag Cheenee, ginned		
"	"	"	"	DS B	20	Subsout, bowed		
"	"	"	"	T B	26	Tonk, bowed		
8	-	-	-	-	1,625	-	Co.'s Rs.	70,060 - -

(True copy.) (signed) C. Allen, Civil Service.

		Rs.	a.	p.	Rs.	a.	p.
Brought forward - - -		Rs.			5,407	5	6
Wages to Persons employed at Kutchery Ghaut:							
Mackenzie					5		
Bull, from 1 February to end of June, at 60/ per m.					300		
Salek Ram, 15 "	to 8 April, at 5/				8	12	
Shankur Loll, Persian writer,	1 March to end of July, at 10/				50		
Damana Loll, mutsundee	- 23 ditto - ditto - at 7/				30		6
Bisson Sing, - ditto	- 1 April - ditto - at 4/				16		
Bux Oolla Khan, jemadar	- 1 March - ditto - at 5/				25		
Shaik Suhoo - sepoy	- 13 January to 12 March, at 3/8				7		
Chait Ram - - "	- 15 March to end of July "				15	12	
Beorbul - - "	- 1 " to 10 June - " "				11	10	8
Almed Ally - - "	- 14 " to 7 July - " "				13	4	9
Oolad Ally - - "	- 14 " to end " - " "				16		6
Bowanny - - "	- 14 " " " - " "				16		6
Wazeer Ooddeen	" - 15 " to 10 June "				10	1	2
Mehatale Khan - - "	- 5 April to " - " "				7	11	2
Soondur Loll - - "	- 5 " to end July - " "				13	8	6
Beharree, weighman	" - 5 March to " - " "				34		1
Theako, mato - - "	- 1 " to 20 July - " "				23	3	6
Budloo, ditto - - "	- 1 April to " - " "				18	3	6
Today, ditto (part of time at 4/)	20 February to end of May "				14		8
Sessa, ditto - - - - -	- 1 April to 9 July - - - - -				16		8
Assa, ditto - - - - -	- 1 " to 4 June, at 5/; then to 5 July, at 3/				13	12	9
Kulloo, bhistic - - - - -	- 25 " to 22 July, at 4/				11	9	6
Muddun " - - - - -	- 25 " to 5 " " - - - - -				9		7
Punchum Sing, chuprassee	- - - - -				7		2
					604	5	-
Servants employed at Gin House Godown:							
Ram Sing, chuprassee,	1 February to 30 April, at 5/				15		
Newul Khan "	1 " " " " - - - - -				15		
Lall Khan "	1 " " " " - - - - -				15		
Mungul Sing "	1 " " " " - - - - -				15		
Chubbeela, head mate,	1 " to 7 May " - - - - -				16	3	6
Bhoora - - - - -	1 " " at 4/ - - - - -				12	14	
Dhoukla - - - - -	1 " " " - - - - -				12	14	
Baddoola - - - - -	1 " " " - - - - -				12	14	
Mukna - - - - -	1 " " " - - - - -				12	14	
Boora - - - - -	1 " " " - - - - -				12	14	
Mudeya - - - - -	1 " " " - - - - -				12	14	
Mukoo - - - - -	1 " " " - - - - -				12	14	
Opada - - - - -	1 " " at 3/8 - - - - -				11	5	3
Bhowanny Sing - - - - -	1 " " " - - - - -				11	5	3
Weighman - - - - -	26 " " at 4/ - - - - -				9		2
					198	2	-
Sundries:							
Tikadars employed in procuring Samples of Cotton from Jeypore, Sophr					25	13	9
Bandah, &c. &c.					19		1
Stationery and ink, &c.					3	14	6
Postage of letters							
					48	13	3
Miscellaneous Charges at Kutchery Ghaut:							
315 coolies, for making and repairing jaffries					34	10	
126 bullics, for ditto					13		4
2,120 bamboos					50	5	6
Md. 4. 10 14. of twine used in making jaffries					15	12	9
1,159 coolies, gathering up cotton, filling and sewing bags, and packing refuse					110	5	6
Seers 2. 13. thread for gunny bags					4	11	6
Seers 4. 13. twine for - ditto					-	6	9
Needles for - - - - ditto					-	6	9
141 that chuttees					22	6	6
232 pieces gunny for floorcloth for pickers					77		2
109 coolies, sewing the same					12		1
Md. 2. 20. 13. of twine					10		1
115 boys, for sweeping and cleaning compound for pickers					8	14	6
403 blistees, for water for pickers					45	14	
23 tailors, for sewing small bags					3		0
5 currees, for scales					2	15	
					414	15	3
Carried forward - - -		Rs.			6,348	9	9

	Rs.	a.	p.	Rs.	a.	p.
Brought forward - - -	414	15	3	6,348	9	9
Miscellaneous Charges at Kutcherry Ghaut—continued.						
13½ pair of sirkees, for tatees - - - - -	1	5	9			
82 gurrahs, for water - - - - -	1	6	-			
74 mats to place below the cotton - - - - -	4	4	-			
Brooms and jhow plants for ditto - - - - -	-	7	-			
Md. 59. 12. 4. parched grain allowed to pickers - - - - -	94	10	6			
53 tallow candles - - - - -	1	3	-			
Seer 1. 11. thread, for small bags - - - - -	1	2	-			
Coolie, for carrying pice to Kutcherry Ghaut - - - - -	-	-	6			
Given to the mates, for chubana - - - - -	4	12	3			
Mater - - - - -	-	6	6			
Travelling allowance to writer from Oomur Ghur - - - - -	1	-	-			
Small bags to hold pice, &c. - - - - -	-	8	-			
				525	11	-
Miscellaneous Charges at Cotton Gin Godown:—						
400 that chuttees, for bags and floorcloth - - - - -	55	-	-			
131 slips of gunny, ditto - - - - -	43	10	6			
Md. 1. 39. 12. twine - - - - -	9	3	9			
2,500 bamboos for ditto, &c. - - - - -	50	-	-			
9 male bamboos for beaters - - - - -	-	3	6			
2 curries for chopper - - - - -	1	3	-			
Md. 3. 22. ban moonj, for ditto - - - - -	7	1	3			
Thicka gurrames to thatch, &c. - - - - -	8	12	-			
9 bildars - - - - -	-	15	9			
7 boys - - - - -	-	7	-			
Making jaffries - - - - -	2	2	-			
Thread for sewing bags - - - - -	-	5	9			
10,000 bundles of straw for chapper - - - - -	15	-	-			
16 brick pillars, 320 feet - - - - -	2	13	-			
4 baskets - - - - -	-	13	-			
				211	-	6
Packing and sewing 1,625 bales of cotton, including gunny and ropes, &c., at 2 per bale - - - - -	3,250	-	-			
	Rs.	a.	p.			
Boat hire to Calcutta - - - - -	4,011	9	9			
Pulladaree in loading boats - - - - -	78	2	9			
Oil allowed for lights - - - - -	-	5	6			
Wages of 8 churrundars in charge - - - - - Rs. 112 - - -						
Advance for way-charges, at 2/ - - - - - 16 - - -						
	128	-	-			
				4,218	2	-
Insurance with Union Insurance Company, under Policies:						
Nos. 68 to 70, 74 to 75, and 77 and 79, including insurance, peon hire, and policy fees - - - - -	3,279	11	-			
				10,747	13	-
	Rs.			17,833	2	3

(E. E.)

(signed) *H. Hamilton Bell,*
Agent Government Cotton Experiment, N. W. P.

Oomur Ghur, 7 September 1847.

(True copy.)

(signed) *C. Allen,*
Civil Service.

(No. 198.)

ABSTRACT of the Cost to Calcutta of 1,625 Bales of Cotton, each weighing 300 lbs., despatched in June and July 1847.

296—Sess. 2.

DESCRIPTION or COTTON.	Marks on the Bales.	Number of Bales.	First Price taken from the Account.	Expenses apportionable to each Description; viz., Screwing, Cleaning and Bowing.	Proportion of General Expense; viz., Insurance, Boat-hire, Servants' Wages and Miscellaneous.	Deduct Value of Refuse Cotton, and Special Items in Home Grown.	Proportion of Deductions for Bags, valued at 400 Rupees, or $\frac{1}{3}$ Rupees per Bale.	Total Net Price to Calcutta of each Description.	Price per Bale of each Description.	Price per lb. in Pence, calculating 300 lbs. to each Bale, and the Rupee at 2 s.
			<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>dec. d.</i>
Bag Cheenee, home grown	BC & BCG	162	6,773 14 3	627 1 3	967 2 -	2,542 6 -	39 13 10	5,785 13 8	35 11 6	2·857 or 2 $\frac{1}{2}$
Ditto - - imported	{ BC & B C B G }	275	8,930 5 2	1,714 13 8	1,641 11 9	595 3 -	67 10 10	11,624 - 9	42 4 3	3·381 or 3 $\frac{1}{2}$
Ditto - - bowed	{ BC B }	4	129 14 4	39 2 1	23 14 -	8 10 5	- 15 9	183 4 3	45 13 1	3·665 or 3 $\frac{1}{2}$
Tonk - - - -	T	494	15,501 9 11	2,171 11 9	2,949 2 6	1,123 - 4	121 9 -	19,377 14 10	39 3 7	3·138 or 3 $\frac{1}{2}$
Ditto, bowed	{ T B }	26	815 13 10	208 12 -	155 3 6	59 2 -	6 6 4	1,114 5 -	42 13 9	3·424 or 3 $\frac{1}{2}$
Chatsoo - - - -	CS	215	6,711 15 3	1,158 10 -	1,283 8 6	414 - -	52 14 6	8,687 3 3	40 6 6	3·232 or 3 $\frac{1}{2}$
Choweeea Newaee	C	183	5,678 14 8	803 3 6	1,092 7 10	294 12 4	45 - 6	7,234 13 2	39 8 6	3·163 or 3 $\frac{1}{2}$
Julaha - - - -	J	62	2,009 13 -	443 2 3	370 2 2	177 3 2	15 4 2	2,630 10 1	42 6 8	3·394 or 3 $\frac{1}{2}$
Madhoopoor - - -	M	40	1,183 - 6	186 1 6	238 12 9	74 12 5	9 13 6	1,523 4 10	38 1 4	3·047 or 3·
Dholepore - - - -	DB	25	723 2 6	115 1 9	149 4 -	41 8 7	6 2 5	939 13 3	37 9 6	3·007 or 3·
Ghur Kehra - - -	G	28	805 14 9	138 9 3	167 2 6	47 9 -	6 15 11	1,057 1 7	37 12 -	3·020 or 3·
Silowree - - - -	S	21	654 15 3	102 15 6	125 6 -	71 - 8	5 2 8	807 1 5	38 6 11	3·075 or 3 $\frac{1}{2}$
Sheodaspoor - - -	S	25	843 6 11	112 14 3	149 4 1	70 10 6	6 2 6	1,028 12 3	41 2 5	3·293 or 3 $\frac{1}{2}$
Barkho - - - -	B & K	45	1,512 7 -	196 13 3	268 10 4	115 14 10	11 1 3	1,850 14 6	42 2 1	3·290 or 3 $\frac{1}{2}$
Subsout, bowed	{ LS B }	20	600 - -	113 - -	119 6 4	10 13 8	4 14 10	816 9 10	40 13 3	3·266 or 3 $\frac{1}{2}$
TOTAL - - -		1,625	52,875 3 4	8,132 - -	9,701 2 3	5,646 10 11	400 - -	64,661 10 8	39 12 8	3·183 or 3 $\frac{1}{2}$

N N 4

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA.

287

I.
Bengal and
North Western
Provinces.

No. 199.

The following Letters are written :

(No. 622 A. of 1847.)

From *John Thornton*, Esq., Secretary to the Government, North Western Provinces, Agra, to *H. M. Elliot*, Esq., Secretary to the Government of India with the Governor-General, Simla.

Revenue Depart-
ment.

Mr. Allen's letter,
dated 22 Sept.,
with enclosures.

Sir,

KNOWING the anxiety which the Honourable the Court of Directors feel regarding the cultivation of cotton in this country, the Lieutenant-governor desires me to request that the accompanying accounts connected with Mr. Bell's experimental investment may, with the permission of the Right honourable the Governor-general, be forwarded by the overland mail now under despatch.

2. It will be observed that the cotton will be received in Calcutta at an expense on the average of $3\frac{3}{8}$ d. the lb.; that the cost of the home-grown cotton will be only $2\frac{7}{8}$ d. per lb. As the further charges will probably be 1 d. per lb. additional, it may be expected that this cotton will be landed in Liverpool at $4\frac{3}{8}$ d. and $3\frac{7}{8}$ d. per lb. The detailed accounts will satisfy the Honourable Court that the charges are fairly stated, and are such as would be incurred by merchants in the usual course of trade.

3. It may be added, that the shipments of the coming season will consist entirely of home-grown cotton, that the crop is very promising, and that there is good reason to believe that the charges will be considerably reduced.

4. With reference to the representations contained in the Lieutenant-governor's minute of 10th August last, regarding the transit duties in Rajpootana, it will be observed from para. 8, of Mr. Allen's letter, that these duties amount to 20 per cent. on the first price of all cotton imported across the North Western frontier. Further details regarding these duties will be required, and will be hereafter submitted.

I have, &c.

(signed) *J. Thornton*,

Secretary to the Govt. N. W. P.

Head Quarters, 30 September 1847.

Duplicate forwarded to the Presidency.

No 200.

(No. 623 A. of 1847.)

From *John Thornton*, Esq., Secretary to the Government of the North Western Provinces, Agra, to *Charles Allen*, Esq., Civil Service, Agra.

Revenue Depart-
ment.

Sir,

I AM directed to acknowledge the receipt of your letter dated the 22d instant, and to inform you that copies of the accounts which you have submitted will be forwarded to the Honourable the Court of Directors by the overland mail now under despatch.

2. With reference to para. 8 of your letter, regarding the transit duties on cotton in foreign states, I am desired to inform you that it is of great importance to procure the most precise information possible on this subject. You are, therefore, requested to examine it farther, and to report what sums were levied, at what places, and by whom. The Lieutenant-governor would be glad to receive from you such observations and suggestions regarding these transit duties as the inquiry may enable you to offer.

I have, &c.

(signed) *J. Thornton*,

Secretary to the Govt. N. W. P.

Head Quarters, 30 September 1847.

(True extracts.)

(signed) *W. Blackburn*,

Reporter of Proceedings.

Home Department, Revenue.—18 December (No. 20) 1847.

To the Honourable the Court of Directors of the East India Company.

Honourable Sirs,

WE have the honour to acknowledge the receipt of your Honourable Court's despatch, No. 13, dated 20th October 1847, communicating observations on the arrangements entered into by the Lieutenant-governor of the North Western Provinces with Mr. Hamilton Bell, for the experimental cultivation of cotton in the neighbourhood of Agra.

2. We

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 289

I.
Bengal and
North Western
Provinces.

2. We have transmitted a copy of this despatch to the Lieutenant-governor, drawing his Honour's particular attention to paras. 5 and 6 of the despatch.

3. One of the most interesting experiments yet undertaken for rendering Indian cotton more fit for the spinning manufacturers of Manchester by an improvement of the cleaning machine of the country, is now in the course of preparation at the Presidency, at the instance of the Lieutenant-governor*, and we have very little doubt that when more attention is given to the culture and clean picking of the cotton in the fields, a sensible benefit will be secured in this staple to both Great Britain and India.

Fort William, 18 December 1847.

We have, &c.
(signed) *Hardinge.*
T. H. Maddock.
&c. &c.

Home Department. Revenue. 31 December (No. 22) 1847.

To the Honourable the Court of Directors of the East India Company

Honourable Sirs,

IN continuation of our despatch, No. 20, dated the 18th instant, we have the honour to transmit the accompanying communication which we have received from the Lieutenant-governor of the North Western Provinces regarding the prosecution of the experiment for the cultivation of cotton in those provinces under the superintendence of Mr. Hamilton Bell, and to request your Honourable Court will be pleased to communicate your orders on this representation before the time arrives (*viz.*, May 1848) for making arrangements for the produce of the year 1848.

Fort William, 31 December 1847.

We have, &c.
(signed) *Hardinge.*
T. H. Maddock.
&c. &c.

(No. 678 A. of 1847.)

From *J. Thornton*, Esq., Secretary to Government, North Western Provinces, to *G. A. Bushby*, Esq., Secretary to Government of India, Home Department, Fort William.

Sir,

WITH reference to the correspondence which has already passed regarding the experimental cultivation of cotton in the North Western Provinces under the superintendence of Mr. H. Hamilton Bell, I am directed to request that you will submit for the consideration of the Right honourable the Governor-general in Council the following observations and proposals. Revenue Department.

2. It will be in the recollection of the Governor-general, that the first steps in the present experiment, which were taken in 1846, met with the approbation of the Honourable the Court of Directors.

3. The home-grown crop was small, and in order to complete the consignment to the extent necessary for a fair experiment, several of the best sorts of cotton from Rajpootanah and the neighbouring countries were purchased in the market; all these were carefully cleaned, and packed in bales at Agra. The produce is now on its way home, but sufficient time has not elapsed to hear of the out-turn. Considerable difference of opinion exists regarding the quality of the cotton, but all parties who have seen it fix upon it a price which would be highly remunerative. It is impossible in the present state of commercial affairs to foresee how prices will range when the consignment comes into the market, but there is good reason to hope that the Government will suffer no loss, and that the gentleman who has so diligently and zealously superintended the experiment will obtain some compensation, more or less, for his trouble.

4. At the commencement of the season of 1847, the Right Honourable the Governor-general, in personal communication with the Lieutenant-governor, expressed his approbation of what had been done, and recommended the further prosecution of the experiment in a similar method.

5. This has been done, but with home-grown cotton only. Mr. Bell's influence in the neighbourhood of his estates enabled him so largely to extend the cultivation on his own terms,

* Mr. Mather's efforts to improve the native churka.

terms, that the whole consignment will consist of cotton grown in the Doab from different kinds of seed cultivated according to the course which Mr. Bell has prescribed.

6. The season has been good. About six weeks ago, the Lieutenant-governor in the course of his tour passed through the country where the crop was growing, saw much of the cultivation, and examined many specimens of the cotton which was then in the course of being gathered. The experiment is attracting the attention of many native gentlemen and landholders, who are desirous to possess themselves of the better varieties of seed, and to follow the example set them by Mr. Bell.

7. There is every prospect, that the out-turn this year will be more favourable than that of last year, but the produce cannot, with every exertion, come into the British market before the end of 1848, and some time, therefore, must elapse before the reasonable expectations on this head can be put to the proof.

8. In May next it will be necessary to provide for the produce of the approaching season, and it is with the view of ascertaining the wishes of the Supreme Government and of the Home Government on this point that I am desired now to address you.

9. It is evident from the preceding detail that the experiment of 1846 was incomplete. Measures were commenced at too late a period to admit of the cultivation of more than one kind of cotton (the Bagcheenee). The consignment was made up by the purchase of foreign cotton. Fully two years are necessary to enable a person to judge of the result of the experiment. The Lieutenant-governor is therefore desirous to have authority to carry on his experiment for another year. If success is not then apparent, its further prosecution will be useless.

10. Simultaneously with the exertion to improve the growth of cotton, great efforts have been made, and are now making, to improve and cheapen the several processes of cleaning, packing, and dispatching the cotton. The American saw-gin, it is well known, has hitherto failed in this part of the country, but there is good prospect that improved machinery on the principle of the common native churkah will both cheapen and improve the process of cleaning. It may be made both to separate the wool from the seed at less cost than by the hand churkah, and also, at the same time, to cleanse the wool from the dust and impurities with which it is often united, and which unfit it for the purposes of the manufacturer. Mr. Mather, the mechanist in the employ of Government, is now at Fort Gloucester constructing his machines there, with all the advantages which the establishment affords him. Good iron screw presses have also been established at Agra, and the greatest attention is paid to the compression of the cotton-wool into properly sized bales, a process which has hitherto been ordinarily performed only in Calcutta.

11. As it is not impossible that some misapprehension may exist as to the terms on which this experiment is now conducted, I am desired to offer a few remarks on that part of the subject.

12. It should be borne in mind, that in the middle of 1846 the Lieutenant-governor found himself with a considerable stock of machinery and materials on hand for the preparation of cotton, and furnished with no instructions as to the course he should pursue. The American planters had given up the experiment in despair, and had left this part of the country. The attempt to clean cotton which had been bought in the market signally failed. It remained only to give up the experiment altogether, and to allow the past experience to be lost, as well as the machinery to be idle, or else to devise some new method of conducting the process. The repeated and strongly expressed wish of the Honourable Court of Directors, as well as the then state of the home market, were strong motives for continuing the experiment on any plan which offered reasonable promise of success.

13. In this conjuncture Mr. H. Hamilton Bell came forward; he is an English gentleman of great mercantile experience and resources, of extensive local influence amongst the agricultural classes, and of the highest character for intelligence and public spirit. He had been an observant spectator of all that had passed in the former experiments. He evidently brought to the work qualifications which could not have been found united in any other person. At that time the cotton trade of Bengal with England had no existence; no one would embark capital in so unpromising a speculation; no further effort would be made except by the Government, and there was no competitor who could be injured by the Government support afforded to Mr. Bell. The proposed plan was simple, and in perfect conformity with the established practice of the country in the cultivation of indigo. It involved but an inconsiderable ultimate expenditure, and was exposed to very small risk. The consequences of failure could not be ruinous—the benefit of success was great.

14. Mr. Bell stipulated for no remuneration. He placed his knowledge, his resources, his influence unreservedly at the disposal of the Government. He only asked for the support of Government till he could prove the truth of his anticipations, and when that was accomplished, he hoped to find himself in a condition to prosecute the enterprise himself. The contingent remuneration which has been offered him, was but a fair reward for the exertions which he made, and was consistent with the character of the Government, which renounces for itself all prospect of gain from commercial speculation.

15. The great distinction between an experiment of this nature, when conducted by the Government and by an individual, is this: the Government acts for the public; it is bound to

to lay before the public all the results; to record faithfully its failures as well as its success; to afford full information to all those who may wish to follow its example; to warn against experienced difficulties, and to indicate expected modes of improvement. The individual, acting for himself, naturally endeavours to keep everything as much as possible within his own breast; he will show results, but to those only who are likely to further his views; he will conceal errors; he will gloss over failures, without any dishonest intention to deceive; he will justly and naturally feel himself warranted in conducting his operations so as to exclude others from the benefit of his labours. Mr. Bell is perfectly sensible of this distinction, and is acting in good faith with reference to it; his accounts are fully and accurately kept; he reports to the Government, from time to time, all that is desirable should be known; and he is now engaged in compiling for the Agricultural and Horticultural Society a detail of his operations, as far as they have proceeded. This has suffered some delay, from the desire to add to the narrative some information which is now being collected by Mr. Mather from the proprietors of the Fort Gloucester Mills, near Calcutta.

16. At a meeting held at Manchester, in July last, by those who were interested in the supply of cotton to England, one of the speakers (Mr. Atherton) asked "how far it was probable that European houses in Bombay might be disposed to establish agencies in India." No satisfactory answer was given to the inquiry, and at length the chairman stated that "there would be great difficulty in establishing those agencies, and also that it would be necessary to establish them to obtain a sufficient supply of cotton. He (the chairman) thought there was sufficient spirit in Manchester to provide funds to embark in the establishment of those agencies, as a mercantile transaction, and to send them orders for cotton."

Quoted from the
"Bombay Times,"
of 4 September
1847.

17. Now it is evident that the mode of operation followed in these provinces effectually provides against the very difficulty which was considered at the time insuperable at Bombay. The Government, while it conducts its experimental cultivation, establishes also on the spot an experienced agent, whom it encourages in every way to seek for the very orders which the Manchester merchants can find no one at Bombay able to execute; and not only so, but by showing exactly how such an agency can be established and worked, it greatly facilitates their multiplication.

18. To establish such agencies is the sole object of the Lieutenant-governor. When he sees them once in operation, he will consider the end accomplished. The Government must then of course immediately withdraw from the field; there will be no difficulty in withdrawal, then, at any time. The new agency will be ever ready to take over the stock in hand, and to reimburse the Government for what may have been advanced for that year; but till such an agency has been established, or till its establishment is pronounced hopeless, the Government cannot, with consistency, withdraw from the course on which they have embarked; for, if they do so, they will have left incomplete one promising mode of operation in a great national undertaking, in which they have already made great sacrifices, and from the success of which they will reap just honour.

19. The Lieutenant-governor trusts that this detail will show that the experiment now in course of prosecution has definite limits, and will be easily tested, and that he is desirous not to press its conduct at all further than may be absolutely necessary to judge of its result. On this understanding he is desirous to be furnished with authority to prosecute the experiment on the same basis as hitherto for another year, or till the conclusion of the season of 1848, the arrangements for which will not be made till May next. He desires me also to convey an assurance, that if the events which may occur between this date and May next render the further prosecution of the experiment to be then inexpedient, he will not avail himself of the authority now solicited.

20. I am further desired to express his Honour's wish that a copy of this despatch may be forwarded by the next overland mail for the consideration of the Honourable the Court of Directors.

I have, &c.
(signed) *J. Thornton*,
Sec. to Govt. N. W. P.

Head Quarters, 16 December 1847.

From *G. A. Bushby*, Esq., Secretary to Government of India, to *J. Thornton*, Esq.,
Secretary to Government North Western Provinces.

Sir,

I AM directed by the Governor-general in Council to acknowledge the receipt of your letter, No. 678 A., dated the 16th instant, regarding the prosecution of the experiments for the cultivation of cotton in the North Western Provinces, under the superintendence of Mr. H. Hamilton Bell, and to state that the same will be referred to the Honourable the Court of Directors by the next mail.

2. You will observe from my communication of the 18th December last that the Honourable Court (in their despatch, No. 13, of 1847)* desire that in concluding the arrangement for the next season with Mr. Bell, it should be stipulated that the advance to be made to him should be repaid, with interest, in the event of the experiment realising a profit. The Honourable

* See Page 262.

I.
Bengal and
North Western
Provinces.

Honourable Court also wish that in all future shipments of experimental cotton the bills of lading should be made out in their favour, and the cotton consigned to the care of Mr. William Rathbone, their authorised agent in Liverpool. At the same time they express their willingness to take into consideration any application which Mr. Bell may make for placing a portion of the cotton in the hands of any parties whom he may name as possessing his confidence, in order that he may have full reason to be satisfied that all due means are taken for bringing it properly under the notice of the manufacturers.

Fort William, 31 December 1847.

I have, &c.
(signed) *G. A. Bushby*,
Sec. to Government of India.

Home Department. Revenue.—No. 1 of 1848.

To the Honourable the Court of Directors of the East India Company.

Honourable Sirs,

WE have the honour, in continuation of our despatch, No. 22, dated the 31st December last, to transmit the accompanying communication from the Lieutenant-governor of the North Western Provinces, stating that your Honourable Court's instructions contained in your despatch, No. 13, dated the 20th October last, regarding the arrangement entered into with Mr. Hamilton Bell for the experimental cultivation of cotton in the neighbourhood of Agra, will be observed, and expressing a hope that before the commencement of the next season, in May, he may be in a position to give a decided opinion as to the expediency of a further prosecution of the experiment on its present basis.

Fort William, 5 February 1848.

We have, &c.
(signed) *Dalhousie*,
T. H. Maddock,
F. Millett.

(No. 1155.)

From *G. A. Bushby*, Esq., Secretary to the Government of India, to the Secretary to the Government of the North Western Provinces.

Home Depart-
ment. Revenue.

Sir,

WITH reference to Mr. Assistant Secretary Shakespear's letter, dated 12th June 1847, No. 2517, to the address of Mr. Elliot, I am directed by the Governor-general in Council to transmit to you, for the information of the Honourable the Lieutenant-governor, the accompanying copy of a despatch from the Honourable the Court of Directors, No. 13, dated 20th October last, with its enclosures, relative to the arrangements entered into with Mr. Hamilton Bell for the experimental cultivation of cotton in the neighbourhood of Agra, and to draw the particular attention of his Honour to paras. five and six of the despatch.

Fort William, 18 December 1847.

I have, &c.
(signed) *G. A. Bushby*,
Secy. to the Govt. of India.

(No. 153 of 1848.)

From *J. Thornton*, Esq., Secretary to the Government North Western Provinces, to *G. A. Bushby*, Esq., Secretary to the Government of India, Home Department, Fort William.

Home Depart-
ment.

Sir,

I AM directed to acknowledge the receipt of your letter, No. 1155, dated the 18th ultimo, with its enclosure, regarding the arrangement entered into with Mr. Hamilton Bell for the experimental cotton cultivation in the neighbourhood of Agra, and in reply to state that the instructions contained in paras. five and six of the Honourable Court's despatch shall be observed. It does not occur to the Honourable the Lieutenant-governor to offer at present any further observations on the subject than are contained in my letter of the 17th ultimo, No. 678 A. His Honour hopes that before the commencement of the following season, in May next, he may be in a position to express a decided opinion whether or not the further prosecution of the experiment on the present basis is desirable.

Head Quarters, 15 January 1848.

I have, &c.
(signed) *J. Thornton*,
Secy. to Govt. N. W. P.

EXTRACT from Revenue Narrative, No. 2 of 1848, dated 30 May 1848.

49. Mr. Bell having submitted some samples of cotton of the current year's cultivation, together with a memorandum descriptive of the several kinds newly introduced, the specimens as well as a copy of the document were forwarded to the Secretary of the India House, for the purpose of being laid before the Honourable Court; a copy of the memorandum was also sent to the Government of India, who communicated it to the Agri-Horticultural Society.

I.
Bengal and
North Western
Provinces.
Cotton Experi-
ment,
Samples of cotton,
with memo., for-
warded to Court
of Directors:
Rev. Pro., January
1848, Nos. 73 to
75: Rev. Pro.,
February 1848,
No. 102.

EXTRACT from the Proceedings of the Honourable the Lieutenant-Governor of the North Western Provinces, in the Revenue Department; dated 14 January 1848.

From *H. Hamilton Bell, Esq.*, Agent Cotton Experiment in the North Western Provinces to *A. Shakespear, Esq.*, Assistant Secretary to Government North Western Provinces.

No. 73.

Sir,

UNDER instructions from the Honourable the Lieutenant-governor, I send herewith samples of cotton of the current year's cultivation, on the experiment now conducting in these provinces, and I beg to accompany this by the annexed descriptive memorandum of the several kinds newly introduced.

I understand it to be the intention of his Honour that these samples should be forwarded to England, but I have no instructions on the subject.

I have, &c.

(signed) *H. Hamilton Bell,*
Agent Cotton Experiment in N. W. P.

Agra, 17 December 1847.

MEMORANDUM.

FOR transmitting a list of the various descriptions of cotton now in cultivation under sanction and instructions of the Government, it may not be thought irrelevant or misplaced to accompany this with some short account of each separate kind, as explanatory of the mode of proceeding adopted, showing its results, and thus perhaps leading to suggestions that may render our future progress greater, and more decidedly beneficial.

I have already in former papers noticed my decided preference for indigenous seed, as the basis at least of all my arrangements, and besides the kinds of which musters were sent home in the early part of the year, the report on which is not unfavourable, and of which subsequent shipments were composed, have met with some other descriptions which I think deserving of attention; amongst these are,

No. 1. Sophur.—Of which the seed was obtained from a place so named, on the confines of the Gwalior territory, near to Kotah. I accidentally heard it mentioned as superior, and immediately sent off a servant, in whom I could confide, to bring me a bullock load of the kupas, that I might learn whether the cotton merited its reputation, and to be sure of the seed as extracted by my own servants. In my opinion it is superior to the Bagcheenee, and it is in every other respect perfectly suited for cultivation in these provinces. It is perfectly hardy, comes quickly to maturity, and is fully as productive. It has attracted greatly the attention of the cultivators, and its introduction into these provinces will be facile and general. In several very carefully conducted experiments I have ascertained that the kupas yields the very large proportion of $32\frac{1}{2}$ per cent. of clean cotton. Our cultivation is on too small a scale to justify any statement of average production, but, at all events, it is in this respect fully equal, or rather superior to the Desee cotton of the Doab. This year we shall have some bales of this quality for shipment, and plenty next year.

No. 2. Hybrid.—I conjecture of Bagcheenee and Chundehree cotton. I have not myself any doubt on this point. I know nothing of botany, and to accident, not science, am indebted for this description. I think very well of it: it has all the good qualities of the Sophur, as to hardness and production, and almost equals it in the relative proportion of cotton and seed, the cleaned cotton being $34\frac{1}{4}$ per cent. of the kupas.

No. 3. Produce of Coimbatore seed.—Remarking in the newspapers that some cotton from thence had been sold at 7*d.* per lb. in England, I obtained, through a kind friend at Madras, some of the seed. From the appearance of the plant I should consider it "New Orleans," but there is a marked difference in the shape of the seed. It will hardly succeed in these districts; and, although I think I may have influence enough to induce a variety of trials the ensuing season, I cannot hope it will answer, from the degree of irrigation it demands, its comparative limited produce, and the diminished relative proportion of cotton in the kupas, the mean of several trials varying but little, being only $25\frac{1}{4}$ per cent. Its fineness, and I think staple, are, however, so attractive that I will not give it up until I am satisfied success with it is hopeless.

I.
Bengal and
North Western
Provinces.

No. 4. Hybrid, of Bombay and Bagcheenee.—This very closely resembles the presumed hybrid noticed as No. 2; and the only reason I have for believing that there must be a difference is, that the flower in the former is white, and in the latter yellow. I do not know whether this is botanically conclusive of a difference of species, and in other respects, as regards production, proportion of cotton to seed, &c., they agree. I should add, that I believe I may say in every cotton field of my own cultivation, there are some plants which are white in the colour of their flower, and that the cotton invariably from these plants, so far as my observation goes, is superior to the perfectly similar plants contiguous, with a yellow blossom. I propose to extend the cultivation of this description as much as practicable.

No. 5. Bombay.—I describe this under this name, the seed reaching me by dāk, the address being in the handwriting of a gentleman then residing at that place, but it has almost perfect resemblance to the Chundehree cotton. It is fine, but it will never answer here, from the extreme tardiness of its arrival at maturity; and although the plant is exuberantly productive of cotton bolls, these are small, and the relative proportion of cotton and seed are discouraging, the former giving, in my trials, only 25 per cent. of the kupas.

No. 6. Of all I have introduced, this, the Jeypore, has attracted most regard. It is by far the most productive, the plants being large and covered with bolls, larger a good deal than the Sophar or Bagcheenee, and double those of the Desee cotton. The cotton seems to have a longer staple than the other descriptions, but it appears to be almost as harsh to the feel as the Dasie. In this field there are a good many plants with a white flower, the general colour being yellow, and these are decidedly the best cotton. I have about two maunds of the kupas of the white flowered Jeypore, and I hope for two more, which will give me seed for 150 beegahs next season. The mean relation of cotton to kupass is $38\frac{3}{4}$ per cent., but some trials gave me above 40 per cent. Of this I send a sample, that my opinion of its preferable quality may be tested in the home market. I am indebted to Major Ludlow, Resident at Jeypore, for the seed of this cotton, which I regard as of the highest promise.

No. 7. Although a variety of villages cultivate the Bagcheenee cotton, thus named, I fancy from the chief village in that part of the pergunnah where it is grown, the produce of "Nundpore," "Bindwas," "Debee," and "Deoghur," has the highest reputation. This probably arises from the deep black soil there prevailing, but it is partially attributed to the careful selection of seed for cultivation. The women in seeding the cotton by the churka, are accustomed, whenever a large boll comes into their hand, to throw it aside into a basket placed for the purpose, and the same process is pursued when the basket's contents are freed from the seed. In this way the very finest bolls produce the seed, and they thus account for their superior cotton. That it is superior is undeniable; for, struck by the remarks, I sent, at some expense, a man to "Nioudpore, to get some seed, and used it in my seer* cultivation. The produce is undoubtedly better than our other Bagcheenee, which is fully equal to the general Gwalior description so named; and its ratio of cotton to kupas is remarkable, being no less on my trials than 38 per cent. The produce even this year will be of sufficient quantity to admit of being packed separately, and by that means we can obtain its accurate estimation in England. I have taken measures for a supply of seed for next year's cultivation from the villages in question, and from my own cultivation I can reckon on sufficient for some thousand beegahs.

No. 8. This cotton, which I term Oomurghur, originally was the produce of a few plants in a kay† sown with the Chundehree cotton. The shape of the leaf, and general appearance of the plant, led me to desire its being separately picked, and the seed set aside for the ensuing year. Whilst the produce of the Chundehree seed generally came so late to maturity as to be continually exposed to frost, and was also otherwise unsuitable, this flowered early, and was fairly productive and fine, and fully justified the trouble taken with it. The natives will now readily use the seed in their sowings. The cotton is $33\frac{1}{3}$ per cent. of the kupas.

No. 9. Seed of white flower Jeypore cotton.

No. 10. I trust it will be considered that these musters establish some progress; and although I fear it will take more time than I had anticipated to give us a fair prospect of success in a struggle partially for the home market, I see nothing to discourage the expectation that, ultimately, we shall effect such an improvement in the cotton of this country as will render it suited for many of the manufactories of Great Britain. I do not look much further than this just now; let us once secure a certain regular market at some price, let us get our cotton into use, and the rest will follow.

(signed) *H. Hamilton Bell,*

Agent Cotton Expt. N. W. P.

* Own, in contradistinction to ryot's cultivation.

† Field.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 295

I.
Bengal and
North Western
Provinces.

The following Letters are written :

(No. 136.)

From *J. Thornton*, Esq., Secretary to Government North Western Provinces, to
J. C. Melvill, Esq., Secretary to the Honourable the Court of Directors, India
House.

No. 74.

Sir,

I AM directed by the Honourable the Lieutenant-governor North Western Provinces to Revenue Depart-
ment. transmit to you, for the purpose of being laid before the Honourable the Court of Directors, the annexed copy of a letter from Mr. H. H. Bell, forwarding samples of cotton of the current year's cultivation, with a memorandum descriptive of the several kinds introduced.

2. The samples referred to are also forwarded for the inspection of the Honourable Court of Directors.

Head Quarters,
14 January 1848.

I have, &c.
(signed) *J. Thornton*,
Secy. to Govt. N. W. P.

(No. 137.)

From *J. Thornton*, Esq., Secretary to Government. North Western Provinces, to
G. A. Bushby, Esq., Secretary to Government of India, Home Department.

No. 75.

Sir,

I AM directed to transmit to you, for the information of the Right honourable the Revenue Depart-
ment. Governor-general in Council, the accompanying copy of a letter this day addressed to the Secretary at the India House, forwarding samples of cotton of the present year's cultivation, for the inspection of the Honourable the Court of Directors, together with copy of Mr. H. H. Bell's communication referred to therein.

Head Quarters,
14 January 1848.

I have, &c.
(signed) *J. Thornton*,
Secy. to Govt. N. W. P.

Home Department. Revenue.—No. 4 of 1848.

To the Honourable the Court of Directors of the East India Company.

Honourable Sirs,

WITH reference to the despatch from the late Governor-general to the address of your Honourable Court, dated the 4th October, No. 23 of 1847, we have the honour to transmit the accompanying papers, which we have received from the Lieutenant-governor of the North Western Provinces, containing further accounts of the expenditure incurred on the cotton experiment carried on by Mr. Hamilton Bell, and details of the cotton of the season of 1846-47, shipped on board the "Surat" and "Guisachen," which sailed from Calcutta in October last for Liverpool. The shipment consists of 1,660½ bales, of 300 lbs. each, and is consigned to Messrs. Rathbone Brothers & Co.

2. The total expense in India on account of the cotton is Rs. 67,916. 10. 11., which, at an assumed exchange of 2 s. the rupee, gives - £. 6,791 13 4

Freight and insurance - - - 1,844 5 -

Total cost at Liverpool - - £. 8,635 18 4

or about 4½ d. per lb.

We have, &c.
(signed) *Dalhousie*.
F. Millett.
J. H. Littler.

Fort William, 18 March 1848.

I.
Bengal and
North Western
Provinces.

EXTRACT from Revenue Narrative, No. 1, dated 16 February 1848.

COTTON.

Collection, No. 3.
Arrival of cotton
in Calcutta; gain
in weight from
moisture.

Para. 59, Revenue
Narrative of 1847.
Revenue Proceed-
ings, October 17th,
No. 190 to 192.

Para. 39. Mr. Allen, in reporting the arrival in Calcutta of the cotton despatched in June and July last, stated that the quantity on weighment was found to be in excess, which he attributed to the absorption of moisture in Bengal; this gain, should it prove equal on all the consignments, would lessen the cost to $3\frac{1}{2}d.$ instead of $3\frac{3}{16}d.$ per lb. For one parcel tonnage has been engaged to Liverpool, per "Surat," and it was in progress of shipment.

EXTRACT Agra Narrative, No. 2, dated 30 May 1848.

Mode of insuring
the cotton of this
year during its
passage to Calcutta.
Revenue Proceed-
ings, March 1848,
Nos. 163 and 164.

55. Mr. C. Allen, civil service, having solicited orders regarding the best mode of insuring the cotton crop of this year during its passage to Calcutta, his Honor observed that the plan proposed of forwarding the cotton uninsured was in conformity with the practice of the Government in other departments, and accordingly sanctioned its adoption, with the proviso contained in the last para. of that officer's letter, viz. that the experiment be debited with the premium, which would be merely a matter of account. His Honor at the same time observed, that the expense for churundars and chuprassees, which should be provided by the insurers, must not be debited in making up the account with Mr. Bell in addition to the premium of insurance.

Adjustment of
accounts.

Para. 28, Narrative
No. 5, of 1846.

Para. 49, Narrative
No. 4, of 1847.

Revenue Proceed-
ings, March 1848,
No. 216 to 219.

Levy of duties on
cotton imported
into Agra from
foreign states.

Para. 59, Revenue
Narrative, No. 3, of
1847.

Revenue Proceed-
ings, March 1848,
No. 381 to 384.

56. Mr. C. Allen, Civil Service, having requested an adjustment of the advances for the cotton investment standing in the Collector's inefficient balance, the accountant solicited and obtained the sanction of Government for charging the amounts, cited marginally, as follows,* the first under the head of "By account current with London," and the last under "Cotton experiment," subordinate to "By revenue charges general." A copy of the correspondence was at the same time furnished to the Government of India for communication to the Honourable the Court of Directors.

58. In compliance with orders of September 30th, Mr. Allen submitted his report respecting the transit duties levied on cotton in its passage from Rajpootana to Agra. A copy of that document was submitted to the Supreme Government, with remarks to the following effect: after adverting to some facts elicited by the communication, his Honor observed that his minute of August 20th last showed the injurious effect upon commerce of the customs duties levied in Rajpootanah and Central India; this was illustrated particularly with reference to the trade in grain, and the present documents proved the same injury to be done to the cotton trade by the same cause. Some of the best cottons came from Jeypoor, and it was evident that they could be raised at a small expense, but under the present system they could not reach the mart with any prospect of successfully competing with other cottons; supposing even the Jeypoor government to consent to reduce its duties, that would not be sufficient so long as cotton, in its transit along 100 miles, was exposed to the exactions of no less than 27 petty feudal chieftains, each of whom levied on an average 1 a. - $\frac{1}{2}$ p. on every maund; it was impossible that trade could flourish under such circumstances. The mode of dealing with the question proposed in the minute above-mentioned, was the most practicable that occurred to the Lieutenant-governor, but it would require a strong and a firm hand to place an effectual check upon those exactions. A copy of the 18th para. of the report was sent to the Resident at Katmandoo, with a view to obtaining information as to the value of the cotton trade said to pass across Nepal into Thibet.

EXTRACT from the Proceedings of the Honourable the Lieutenant-Governor of the North-Western Provinces in the Revenue Department; dated 14 March 1848.

(No. 163.)

From C. Allen, Esq., Civil Service, to J. Thornton, Esq., Secretary to Government.
North Western Provinces.

Revenue. Sir,
I HAVE the honour to request the orders of the Honourable the Lieutenant-governor regarding the best mode of insuring the cotton crop of this year during its passage hence to Calcutta.

2, Last.

* Net cost of investment shipped per ships "Surat" and "Guisachen"	-	-	-	Rs.	a.	p.
Amount contingent bill appertaining to the cotton experiment about to be submitted to Government	-	-	-	67,916	10	11
	-	-	-	197	14	6

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 297

I.
Bengal and
North Western
Provinces.

2. Last year, Mr. Hamilton Bell insured with the Union Insurance Company of Calcutta, at 4½ per cent., which was a very heavy rate, but native underwriters object to insure cotton aence to Calcutta.

3. The large number of failures in the Calcutta money market renders it, I think, problematical whether the payment there of the premium would insure recovery in case of loss. I would, therefore, propose sending the cotton to Calcutta uninsured.

4. Should this plan be sanctioned, Mr. Bell and myself would, of course, take especial care to employ only good and strong boats, and to send with them trustworthy churundars and chuprasees to take care of the cargo.

5. Should it be deemed desirable, there could be no difficulty in debiting the experiment with so much premium, the Government being its own insurers.

I have, &c.
(signed) C. Allen.

Agra, 2 March 1848.

(No. 1031.)—(No. 164.)

From J. Thornton, Esq., Secretary to the Government North Western Provinces,
to C. Allen, Esq., Agra.

Sir,

I AM directed by the Honourable the Lieutenant-governor to acknowledge the receipt of Revenue Department your letter, dated the 2d instant, regarding the best mode of insuring the cotton crop of this year during its passage to Calcutta, and in reply to observe that the plan you propose of forwarding the cotton uninsured is in conformity with the practice of the Government in other departments. His Honour has been pleased to sanction its adoption with the proviso contained in your last paragraph, which will be merely a matter of account.

2. I am desired at the same time to observe that the charge for churundars and chuprasees, which should be provided by the insurers, must not be debited to the experiment in making up the account with Mr. Bell, in addition to the premium of insurance.

I have, &c.
(signed) J. Thornton,
Secy. to the Govt. N. W. P.

Agra, 14 March 1848.

(No. 960 of 1848.)

From J. Thornton, Esq., Secretary to Government North Western Provinces, to G. A. Bushby, Esq., Secretary to the Government of India, Home Department, Fort William.

Sir,

IN continuation of my letter, No. 622 A, dated the 30th September 1847, I am directed by the Honourable the Lieutenant-governor to forward, for transmission to the Honourable the Court of Directors, the accompanying copies of three letters from Mr. C. Allen, dated 30th September, 8th ultimo, and 1st instant, and of their respective enclosures; submitting further accounts of the expenditure incurred on the cotton experiment carried on by Mr. Bell, and containing details of the shipment of the cotton to England per "Surat" and "Guisachen."

2. The Lieutenant-governor desires me to request that these papers may be forwarded to the Honourable Court by the overland route.

I have, &c.
(signed) J. Thornton,
Secy. to Govt. N. W. P.

Agra, 10 March 1848.

I.
Bengal and
North Western
Provinces.

(No. 1, in No. 960 of 1848.)

From Charles Allen, Esq., Civil Service, to J. Thornton, Esq., Secretary to Government, North Western Provinces, Revenue Department.

Sir,

I HAVE the honour, in continuation of my letter of the 22d instant, to forward, for the information of the Honourable the Lieutenant-governor, copy of a letter received by Mr. Hamilton Bell, acknowledging the receipt of the cotton dispatched from this in June and July last.

2. It will be observed that the first dispatch of 845 bales was found on weighment to be in excess a quantity sufficient for 21 bales of 300 lbs. each, exclusive of one bale short delivered.

3. This gain in weight is, without doubt, caused by the absorption of moisture in the damp climate of Bengal, as compared with the hot winds which raged when the first parcels were dispatched; it is probable that the gain will be less in other parcels dispatched later in the season.

4. This gain, should it prove equal on all the cotton, will lessen its cost by about one-sixteenth of a penny per pound; thus making the average to Calcutta $3\frac{1}{8}$ d. instead of $3\frac{3}{16}$ d. per lb.

5. The charges shown by this letter are four-fifths of a penny for freight; that for insurance is not stated; but it can scarcely be more than one-fifth of a penny; making altogether one penny, which will, as I estimated previously, make the total cost to Liverpool under fourpence farthing a pound. I hope the drawback will pay the Calcutta charges, or very nearly so.

I have, &c.
(signed) C. Allen,
Civil Service.

Agra, 30 September 1847:

(True copy.)

(signed) J. Thornton,
Secy. to Govt. N. W. P.

(No. 2, in No. 960 of 1848.)—(No. 404.)

From Messrs. Mackillop, Stewart & Co., Calcutta, to H. H. Bell, Esq., Agent to the Honourable Company's Cotton Experiment, North Western Provinces, Agra.

Sir,

WE have the pleasure to advise the arrival of the dispatch of 845 bales cotton, for which invoices were enclosed in your letter of the 7th June.

We also beg to announce the arrival of the second dispatch of cotton of 780 bales, of which invoices were received by us under cover of your letter of the 21st July.

Of the 845 bales, 844 were safely received; but one was short delivered by the manjee; and we have recovered from him on that account 30 Company's rupees at your credit. The manjee's name is Bharoe, and the number of his boat 272. This cotton has been carefully screwed, and the original marks equally carefully preserved, and the peculiar mark of the Company affixed to each bale in addition. We annex a memorandum of the number of screwed bales, showing an excess of 19, besides a small quantity of packings, which will be sold, the proceeds being carried to your credit. The screws are only adapted to make 300 lbs. bales; and we found we could not confine the screwed bales to the exact number of the half screwed, as received by us.

For this parcel we have engaged tonnage to Liverpool per "Surat," a first-class vessel, at 5 l. per ton, and are in progress of shipment. We have effected insurance at 12 Company's rupees per maund, as instructed by you; and as you gave no specific instructions on that head, shall make the policies payable in London, in case of need. Bill of lading and policy of insurance go forward to Messrs. Rathbone Brothers & Co. The "Surat" will get away before the holidays.

We are now loading the 780 bales, and shall lose no time in having them screwed and dispatched in the same manner as the parcel of 845, of which you shall have due advice. We think we shall be able to make this shipment also before the holidays.

On

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 299

On recovery of the drawback on these two parcels of cotton, we will wait on you with a memo. of charges and sums at credit.

We have at length the pleasure to advise the sale at *Co's. Rs. 9. 6.* per bazar maund of the 241 $\frac{1}{2}$ bales of cotton, of which the dispatch to our care was advised in your letter of the 14th January; so soon as delivery is effected, we will render our account of sales, and pay the proceeds into the Treasury, sending you the duplicate receipt as desired. The cleanliness of this cotton has secured a price considerably beyond what would have been commanded by its quality.

Calcutta, 22 September 1847.

We are, &c.
(signed) *Mackillop, Stewart & Co.*

I.
Bengal and
North Western
Provinces.

(True copy.)

(signed) C. Allen, c. s.

(True copy.)

(signed) J. Thornton,
Secy. to Govt. N. W. P.

(Copy.)

(No. 3, in No. 960 of 1848.)

MEMORANDUM of 845 BALES COTTON Screwed for Export to Liverpool for Account of the Honourable Company.

MARKS.	Half-screwed Bales.	Whole Bales.
J. - - - -	62 Bales - - -	63 Bales.
M. - - - -	40 " - - -	41 "
D. B. - - - -	25 " - - -	25 "
G. - - - -	26 " - - -	26 "
S. x - - - -	21 " - - -	21 "
B. C. } - - - -	16 " - - -	16 "
G. } - - - -		
B. C. - - - -	148 " - - -	152 "
T. - - - -	235 " - - -	241 "
B. C. } - - - -	272 " - - -	278 "
B. } - - - -		
	845 Bales.	
Short landed - -	1 "	
	844 " - Rescrewed - -	863 Bales.

Loose cotton, about two bales.

(signed) *M., S. & Co.*

(True copy.)

(signed) C. Allen, c. s.

(True copy.)

(signed) J. Thornton,
Secy. to Govt. N. W. P.

(No. 5, in No. 960 of 1848.)

The Honourable Company, in Account with *H. H. Bell*, Esq., Agent Cotton Experiment,
North Western Provinces.

1847 :	<i>Dr.</i>	<i>Rs. a. p.</i>	1846 :	<i>Cr.</i>	<i>Rs. a. p.</i>
31 July	To Cost and charges of cotton as dispatched to Calcutta, as per account rendered -	*67,462 10 8 64,661 10 8	25 July	By Treasury receipts, Nos. 1 to 12 - - - - -	132,000 - -
4 Dec.	- Charges in Calcutta, repacking and shipping, and as per account from Messrs. Mackillop, Stewart & Co. -	5,433 11 6	14 Oct.	- Sales of 241 $\frac{1}{2}$ bales of cotton sold in Calcutta, as per Messrs. Mackillop, Stewart & Co.'s account - -	5,433 13 6
" "	- Receipts of cotton of Mirzapore, Nos. 1 to 7, for cash paid into that Treasury -	31,287 10 8	3 Dec.	- Net sales of picking of cotton bags, &c., ditto - ditto	733 12 -
" "	- Receipt, No. 134, of General Treasury, Co's money, dated 15th December 1847 -	732 14 -	15 "	- Value from boat mangie of one (1) bale of cotton short delivered - -	<i>Rs. a. p.</i> 35 - -
" "	- Receipt, No. 170, General Treasury, dated 22d January 1848 - - - - -	2,724 6 9	1847 : 21 Jan.	- Received of the collector of Government customs for drawback on 1,488 whole and five half bales cotton exported per "Surat," and "Guisachen" - -	2,716 15 -
" "	- Cotton gin account for sundry disbursements, as per contingent bill - -	1,097 14 6			2,751 15 -
" "	- Adjustment of Hurloll Sait's account of exchange, &c., erroneously not debited -	1,276 7 6			Less commission 27 8 3
" "	- Postages charged by Messrs. Mackillop, Stewart, & Co.	3 - -			
		110,018 11 7			2,724 6 9
	- Balance transferred to operations of account for this season - - - - -	*33,674 4 8 30,873 4 8			
	<i>Co's. Rs.</i>	140,892 - 3			<i>Co's. Rs.</i> 140,892 - 3

(E. E.)

Agra, 31 January 1848.

(signed) *H. Hamilton Bell*,
Agent Cotton Expt. N. W. P.

(True copy.)

(signed) *J. Thornton*,
Secy. to Govt. N. W. P.

* Mr. Bell has agreed to transfer to this season's operations the 2,801 rupees deducted in former accounts for seed supplied, refuse bags, &c. This will reduce the first debit to the sum entered in *italics*, and increase by a similar amount the balance transferred, as noted also in *italics*.

(signed) *C. Allen*.

(No. 6, in No. 960 of 1848.)—(No. 941.)

MEMORANDUM of sundry Charges for 1,658 Whole and 5 Half Bales of Cotton, shipped by the Undersigned, on board the "Surat" and "Guisachen," for Liverpool, and consigned to Messrs. Rathbone Brothers & Co., for account of H. H. Bell, Agent, North Western Government Cotton Experiment Account.

Per "Surat":		<i>Ms. s. c.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>
845 whole bales, each 300 lbs., or	B. maund	3,086 17 8		
Per "Guisachen":				
813 whole bales, each 300 lbs.	} B. maund	2,978 27 8		
5 half bales, each 150 lbs. -				
1,658 whole bales	B. maund	6,065 5 0		
5 half bales, at Co.'s Rs. 10. 8. per B. maund		- - -	63,683 13 -	
Sold for Cash:		<i>Rs. a. p.</i>		
Good cotton, wg. B. mds. 8. 25. 12., at 9/2 per md.		- 78 14 -		
Chole cotton, wg. B. mds. 25. 6. 1 1/2, at 8/12 per md.		- 204 5 9		
Lashing, ink, &c. wg. B. mds. 197. 1., at 1/ per md.		- 197 - 6		
Gunnies, 1588, at 13/ %.		- 214 6 -		
B. maunds 29, at 10/8 per md.		- 39 1 9		
			733 12 -	
			<i>Rs.</i> 64,417 9 -	
Charges:				
Paid eight manges, as per order, each at 10 rupees		- - -	- - -	80 - -
Toll due on eight boats		- - -	- - -	151 9 -
Coolie hire for landing, exporting, picking, &c.		- - -	- - -	391 1 6
Cargo, boat hire for exporting		- - -	- - -	215 - -
Screwing -		- - -	- - -	2,618 2 -
Premium of Insurance payable in London:				
Per "Surat," on Co.'s Rs. 37,500, at 2 1/2 %.		- - -	937 8 -	
Per "Guisachen," on Co.'s Rs. 36,000, at 2 1/2 %.		- - -	900 - -	
	<i>Co.'s Rs.</i> 73,500	<i>Co.'s Rs.</i>	1,837 8 -	
Brokerage effecting ditto, at 1/2 %.		- - -	- - -	367 8 -
Commission on Co.'s Rs. 64,417. 9, at 2 1/2 %.		- - -	- - -	1,610 7 -
			<i>Co.'s Rs.</i>	5,433 11 6

Drawback not yet received.

Calcutta, 4 December 1847.

(E. E.)

(signed) Mackillop, Stewart & Co.

(True copy.)

(signed) H. Hamilton Bell.

(True copy.)

(signed) J. Thornton,
Secy. to Govt. N. W. Provinces.

I.
Bengal and
North Western
Provinces.

(No. 7, in No. 960 of 1848.)

NOTE of CLAIMS established by *Hurloll Sait*, in excess of his Invoices.

	Rs. a. p.	Rs. a. p.
Error in duty on Tonk purchase at Sewai, 2,800 maunds, charged at 1 a. 6 p., but present charge really paid, 2 a. 5 1/2 p.	167 11 4	
Chowkedaree on road at villages	104 7 -	
Charge made for place in Serai where carts are admitted at night	44 6 -	
Theekadars	25 12 6	
Mending bags on road	27 12 -	
	370 - 10	
Less discount on Madopore currency at 6 per %	22 2 9	347 14 1
1,317 bags of cotton, Jeypore and Bhurtpore duty, at 6 p. excess in charge	41 2 6	
103 mules, additional duty in Jeypore, at 4 z.	25 12 -	
273 1/2 ditto at 3 a.	51 4 6	
	118 3 -	
Add, batla	2 1 1	120 4 1
Difference in Jeypore currency 'Rs. 2,782. 2. 9, charged as Madhopore currency at 13 per %	361 11 -	
Less discount on Madhopore currency, at 6 per %	21 11 2	339 15 10
Additional duty charged in Jeypore on 723 bags in invoice 1/2, actual duty paid 1/10/3	372 12 9	
Costs and duty at Bhurtpore	22 15 6	
Hoondian on Rs. 395. 12. 3, at 5/8 per %	21 12 3	
		417 8 6
3,807 bales of sundries		50 13 -
	Co.'s Rs.	1,276 7 6

Agra, 31 January 1848.

(signed) *H. Hamilton Bell*,
Agent Cotton Experiment N. W. P.

(True copy.)

(signed) *J. Thornton*,
Secretary to Govt. N. W. P.

(No. 8, in No. 960 of 1848.)

H. H. Bell, Esq., Agent North Western Provinces, Government Cotton Experiment, in Account with Messrs. *Mackillop, Stewart & Co.*

1847:	Dr.	Rs. a. p.	1847:	Cr.	Rs. a. p.
4 Dec.	To sundry charges on 1,658 whole and 5 half bales of cotton, shipped per "Surat" and "Guisachen," for Liverpool, and consigned to Messrs. Rathbone (Brothers) & Co.	5,433 11 6	14 Oct.	By net proceeds of 421 1/2 bales cotton, as per accounts of this date	5,433 13 6
	Postages	3 - -	3 Dec.	By cash received for the sale of good cotton, B. md. 8. 25. 12, at 9 1/2	78 14 -
	Balance paid the sub-treasurer, as per receipt	732 14 -		Chole, 25. 6. 1 1/2, at 8 1/2	204 5 9
				Lashing, ink, &c., 197. 1. 1.	197 - 6
				Gunny, 1,588, at 13/8	241 6 -
				1 bale cotton, B. md. 3. 39, at 10/8	39 1 9
					733 12 -
	Co.'s Rs.	6,169 9 6		Co.'s Rs.	6,169 9 6

Calcutta, 4 December 1847.

(E. E.)

(signed) *Mackillop, Stewart & Co.*

Dependency.—Drawback when received.

(True copy.)

(signed) *H. Hamilton Bell*.

(True copy.)

(signed) *J. Thornton*, Sec. to Govt. N. W. P.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 303

No. 9 in No. 960 of 1848.

STATEMENT.

I.
Bengal and
North Western
Provinces.

		Rs. a. p.
1847:		
15 Dec.	Received of the boat mangee value of one bale of cotton, short delivered	35 - -
1848:		
21 Jan.	Received of the Collector of Government Customs, for drawback on 1,488 whole and 5 half bales cotton, exported per "Surat" and "Guisachen"	2,716 15 -
	Co.'s Rs.	2,751 15 -
	Less our commission, at 1 per cent.	27 8 3
22 Jan.	Balance paid into the Treasury, per Sub-treasurer's receipt	2,724 6 9
	Co.'s Rs.	2,724 6 9

(signed) Mackillop, Stewart & Co.

(True copy.)

(signed) J. Thornton,
Seco. to Govt. N. W. Provinces.

(No. 10, in No. 960 of 1848.)

From C. Allen, Esq., Civil Service, to J. Thornton, Esq., Secretary to Government North Western Provinces,

Sir,

I HAVE the honour in continuation of my letter of the 8th ultimo, to submit for the information of the Hon. the Lieutenant-governor copies of the invoices of the two dispatches of the Government cotton of last year.

2. The "Surat" and "Guisachen" sailed from Calcutta in October 1847, and have in all probability reached Liverpool before this.

Agra, 1 March 1848.

I have, &c.
(signed) C. Allen.

(True copy.)

(signed) J. Thornton,
Secretary to Govt. N. W. P.

(No. 11, in No. 960 of 1848.)

Invoice of 845 bales of Cotton shipped per "Surat," Harrison, Master, from Calcutta, by Messrs. Mackillop, Stewart & Co., to the Consignment of Messrs. Rathbone Brothers & Co., to Liverpool, for Sale and Returns on Account of Cotton Experiment of Honourable East India Company under Orders of Government, North Western Provinces.



J	62 bales each, containing 300 lbs. net weight Julaha cotton.
M	40 - ditto - - ditto - - ditto - Madopoor.
D B	25 - ditto - - ditto - - ditto - Dholapoor Boree.
G	26 - ditto - - ditto - - ditto - Gurckhera.
S	21 - ditto - - ditto - - ditto - Silowree.
B C	} 16 - ditto - - ditto - - ditto - Bangcheenee, ginned.
G	
B C	148 - ditto - - ditto - - ditto - Bangcheenee, home grown.
B C	} 272 - ditto - - ditto - - ditto - " imported.
B	
T	235 - ditto - - ditto - - ditto - Tonk.
845 bales. B. maunds 3,086. 17. 8., or Co's. Rs. 34,305. 2. 6.	

(True copy.)

(signed) C. Allen.

(True copy.)

(signed) J. Thornton,
Secretary to Govt. N. W. P.

I.
Bengal and
North Western
Provinces.

(No. 12, in No. 960 of 1848.)

Invoice of 813 Whole and 5 Half Bales of Cotton, shipped per "Guisachen," *Harrison*, Master, from Calcutta, by Messrs. *Mackillop, Stewart & Co.*, to the Consignment of Messrs. *Rathbone Brothers & Co.*, of Liverpool, for Sale and Returns on Account of Cotton Experiment of Honourable East India Company, under Orders of Government North Western Provinces.

4 H E I C C	186 bales each, containing 300 lbs. net weight, Chowrea Nawace.
S X	25 ½ - ditto - - ditto - - - ditto - Sheodaspore.
C S	220 - ditto - - ditto - - - ditto - Chassoo.
B K	46 ½ - ditto - - ditto - - - ditto - Baskho.
B C G	} 1 - ditto - - ditto - - - ditto - Baugcheenee, ginned.
B C	
T B	} 30 - ditto - - ditto - - - ditto - Tonk, bowed.
T	
L S B	} 20 - ditto - - ditto - - - ditto - Subson, bowed.
T	
B C B	} 6 - ditto - - ditto - - - ditto - Baugcheenee, imported.
B C	
J	1 - ditto - - ditto - - - ditto - Julaha.
M	1 - ditto - - ditto - - - ditto - Madhopoor.
T	6 - ditto - - ditto - - - ditto - Tonk.
G	1 half bale - - ditto - - - 150 lbs. Gurkherah.
D B	1 - ditto - - ditto - - - ditto - Dholopore bree.
S	1 - ditto - - ditto - - - ditto - Silowaree.
	813 whole bales } 5 half bales - } B. maunds, 2,978. 27. 8., or Co's. Rs. 33,157. 8. 2.

(True copy.)

(signed) C. Allen.

(True copy.)

(signed) J. Thornton,
Secretary to Govt. N. W. P.

(No. 257.)

From *G. A. Bushby, Esq.*, Secretary to the Government of India, Home Department, to
J. Thornton, Esq., Secretary to Government of the North Western Provinces.

Sir,

revenue.

I AM directed by the Governor-general in Council to acknowledge the receipt of your letter, No. 960, dated the 10th instant, with its enclosures, reporting the shipment to Liverpool of 1,660 ½ bales of cotton of 300 lbs. each, being the result of the experiment carried on by Mr. Hamilton Bell for the season of 1846-47, and to state in reply that, as requested, the papers will be transmitted to the Hon. the Court of Directors by the mail under despatch.

Fort William,
18 March 1848.

I have, &c.
(signed) *G. A. Bushby*,
Secretary to Govt. of India.

Home Department, Revenue.—No. 6 of 1848.

To the Honourable the Court of Directors of the East India Company.

Honourable Sirs,

WE have the honour to transmit the accompanying papers received from the Lieutenant-governor of the North Western Provinces regarding the adjustment of the amount disbursed on account of the cotton experiment at Agra, as reported to your Honourable Court in our despatch No. 4, dated the 18th instant.

We have, &c.
(signed) *Dalhousie.*
F. Millett.
J. H. Littler.
T. H. Maddock.

Fort William,
25 March 1848.

(No. 1116 of 1848.)

From *J. Thornton*, Esq., Secretary to Government, North Western Provinces, to
J. A. Dorin, Esq. Secretary to Government of India, Financial Department, Fort
William.

Sir,

I AM directed by the Honourable the Lieutenant-governor to transmit to you, for the Revenue Department information of the Honourable the Court of Directors, the annexed copy of a letter, No. 5145, from the Accountant, N. W. P., dated the 25th ultimo, with its enclosures, regarding the adjustment of the amount disbursed on account of the cotton experiment, together with copy of a letter this day addressed to that officer in reply.

Agra,
20 March 1848.

I have, &c.
(signed) *J. Thornton*,
Secy. to Govt. N. W. P.

(No. 1, in No. 1116 of 1848.)—(No. 5145.)

From *C. Grant*, Esq., Accountant, North Western Provinces, to *J. Thornton*, Esq.,
Secretary to Government, North Western Provinces, in the Revenue Department.

Sir,

I HAVE the honour to submit, in original, a letter from *C. Allen*, Esq., of the Civil Service, dated 5th instant, and to be enabled to comply with his request beg the favour of your obtaining the sanction of the Honourable the Lieutenant-governor N. W. Provinces, to my directing the Collector of Agra to charge the amounts as per margin,* in his next Treasury Account, the first under the head of "By Account Current with London," and the last under "Cotton Experiment," subordinate to "By Revenue Charges General."

2. I have verified the payments, amounting to Rs. 31,287. 10. 8, made into the Mirzapore Treasury, for which the Collector of Agra has already taken credit, and for the two payments made into the general Treasury, amounting to Rs. 3,457. 4. 9. Mr. Allen has furnished the sub-treasurer's receipts.

3. With your reply be pleased to return Mr. Allen's letter.

Accountant's Office, N. W. P., Agra,
25 February 1848.

I have, &c.
(signed) *C. Grant*,
Accountant, N. W. P.

(True copy.)

(signed) *J. Thornton*,
Secy. to Govt. N. W. P.

* Net cost of cotton investment shipped per ships "Surat" and "Guisachen" - -	Rs. a. p.
Amount of a contingent bill appertaining to the cotton experiment, about to be submitted to Government - - - - -	69,916 10 11
	1,097 14 6

I.
Bengal and
North Western
Provinces.

(No. 2, in No. 1116 of 1848.)

From *C. Allen*, Esq., C. S., to *C. Grant*, Esq., Accountant, North Western Provinces.

No. 6761.

Sir,
WITH reference to the sum of 1,32,000 Company's rupees advanced to me under Government orders, dated 21st May 1846, on account of cotton investments under the superintendence of Mr. H. Bell up to June last, I have the honour to request that you will, in communication with the Collector of Agra, make such an adjustment of the advances in question standing in that officer's inefficient balance as will relieve me to the extent of *Co.'s Rs. 103,759. 8. 10.*, and to transfer the balance of *Rs. 33,674. 4. 8.*, as per memo. in the margin,* to the cotton investment for the current year authorised in Government orders, dated 12th June 1847.

The sub-treasurer's receipts for *Rs. 3,457. 4. 9.* are herewith transmitted.

Agra, 5 February 1848. I have, &c.
(signed) *C. Allen*, Civil Service.

(True copy.)
(signed) *J. Thornton*, Secy. to Govt. N. W. P.

(No. 3, in No. 1116 of 1848.)—(No. 134.)

Duplicate. General Treasury, Civil Pay Department,
15 December 1847.

Co.'s Rs. 732. 14. RECEIVED from Messrs. Mackillop, Stewart & Co. the sum of Company's rupees Seven hundred and Thirty-two and Fourteen annas, stated to be on account of the cotton gin experiment of the Honourable Company's Government in the North Western Provinces.

(signed) *G. Udny*, Sub-Treasurer.

(True copy.)
(signed) *J. Thornton*, Sec. to Govt. N. W. P.

(No. 4, in No. 1116 of 1848.)—(No. 170.)

Duplicate. General Treasury, Civil Pay Department,
22 January 1848.

Co.'s Rs. 2,724. 6. 9. RECEIVED from Messrs. Mackillop, Stewart & Co. the sum of Company's rupees Two thousand Seven hundred and Twenty-four, Six annas, and Nine pie, stated to be on account of the cotton experiments of the Government of the North Western Provinces.

(signed) *G. Udny*, Sub-Treasurer.

(True copy.)
(signed) *J. Thornton*, Secy. to Govt. N. W. P.

(No. 5, in No. 1116 of 1848.)—(No. 1115 of 1848.)

From *J. Thornton*, Esq., Secretary to Government, North Western Provinces, to
C. Grant, Esq., Accountant, North Western Provinces.

Revenue Department.

Sir,
I AM directed to acknowledge the receipt of your letter, No. 5145, dated the 25th ultimo, with its enclosures, and in reply to inform you that the Honourable the Lieutenant-governor has

	<i>Rs.</i>	<i>a.</i>	<i>p.</i>
* Amount received from Agra Treasury	1,32,000	-	-
Received by Mr. Bell's agents on account sale of 241 $\frac{1}{2}$ bales of cotton in Calcutta, appertaining to the cotton experiment	5,433	13	6
Net cost of cotton investment shipped to England per ships "Surat" and "Guisachen"	67,916	10	11
Amount paid into the Mirzapore Treasury	31,287	10	8
Amount paid into the general Treasury by Mr. Bell's agents, to credit of cotton experiment:			
One receipt, dated 15th December 1847	732	14	-
One ditto, dated 22d January 1848	2,724	6	9
	3,457	4	9
Amount of a contingent bill appertaining to the cotton experiment, about to be submitted to Government	1,097	14	6
	1,03,759	8	10
	33,674	4	8

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 307

has been pleased to authorise the Collector of Agra to charge in his Treasury account the amounts specified on account of cotton experiment to the respective heads of "By Account Current with London" and "By Revenue Charges General."

I.
Bengal and
North Western
Provinces.

2. The original enclosures of your letter are herewith returned, copies being kept for record.

Agra, 20 March 1848.

I have, &c.
(signed) J. Thornton,
Secy. to Govt. N. W. P.

(True copy.)
(signed) J. Thornton, Secy. to Govt. N. W. P.

EXTRACT of a Letter from the Government of India to the Honourable the Court of Directors, dated 30 September (No. 20) 1848.

14. Subsequent to the receipt of your Honourable Court's Despatch, No. 2 of 1848, dated 21 March, the Lieutenant-governor reported that in accordance with the instructions therein contained, no further advances had been made for carrying on the experiment under Mr. Bell for another season.

(No. 302.)

From G. A. Bushby, Esq., Secretary to the Government of India, to the Secretary to Government North Western Provinces.

Sir,

WITH reference to Para. 8 of your letter No. 1289, of the 31st ultimo, I am directed to state, for the information of the Honourable the Lieutenant-governor, that the Governor-general in Council is unable to authorise any engagement being made with Mr. Bell for the season of 1848, except upon the modified footing sanctioned by the Honourable Court in para. 5 of their Despatch, No. 13 of 1847,* a copy of which was forwarded to you with my letter of the 18th December last, and to the instructions contained in which your attention was again requested in my reply to your letter of 16th December, No. 678 A.

Home Department
(Revenue).

Fort William, 15 April 1848.

I have, &c.
(signed) G. A. Bushby,
Secy. to the Govt. of India.

(No. 1289 of 1848.)

From J. Thornton, Esq., Secretary to Government, North Western Provinces, to G. A. Bushby, Esq., Secretary to Government of India, Home Department, Fort William.

Sir,

WITH reference to para. 4 of my letter of 30th September 1847, I am desired to forward, for the consideration of the Right Honourable the Governor-general in Council, the accompanying copy of a letter, dated the 16th instant, from Mr. C. Allen, reporting on the duties levied upon cotton in its passage from Rajpootana to Agra.

Revenue Depart-
ment.

2. The cottons from Tonk and Chowree Newahee have both to travel from the mart to Agra, a distance of 160 miles, of which 100 lies through the Jeypoor country, 30 through Bhurtpore, and 30 through British territory.

3. The cost price may be assumed at 4. 12. the Company's maund, upon which the following duties will be levied.

	From Tonk.	From Chowree Newahee.
	Rs. a. p.	Rs. a. p.
Town duties - - - - -	- 2 10	- 4 1
Transit duty, Jeypoor - - - - -	- 11 7	- 11 7
" Thakoors - - - - -	- 3 1	- 3 1
" Bhurtpoor - - - - -	- 3 1	- 3 1
" British - - - - -	- 8 -	- 8 -
TOTAL - - - Rs.	1 12 7	1 13 10

N. B.—These rates are deducted from the statements made in para. 7 of Mr. Allen's letter.

In the former case the duties are 37 per cent. on the prime cost, and in the second, 39.

* See page 262.

I.
Bengal and
North Western
Provinces.

4. In Jyepoor alone, on a distance of only 100 miles, a duty is levied of 14*a.* 8*p.*, of which sum 3*a.* 1*p.* consist of fees to no less than 27 thakoors. This is a state in which British influence is particularly exerted. The country may be said to have been almost under British administration for some years.

5. The duty on the N. W. frontier line levied by this government is heavy, but it must be remembered, that this single payment exempts the cotton from any further demand throughout the whole extent of British India, and that a corresponding drawback is given on the export of the cotton to Europe. Any reduction of the present duty would most probably result in swelling the profits of foreign states, without materially benefiting trade. It seems that now a large portion of the trade from Rajpootana passes westward to Sukkur, and by Palee to Bombay. It is possible that the result of the abolition of the frontier duty would be to throw the terminal line of the two channels of traffic to the east and to the west, somewhat further westward.

6. The Lieutenant-governor, in his minute of 10th August last, showed the injurious effect upon commerce of the customs duties levied in Rajpootana and Central India. This was illustrated particularly with reference to the trade in grain. The present documents prove the same injury to be done to the cotton trade by the same cause. Some of the best cottons come from Jyepoor, and it is evident that they can be raised at a small expense; but, under the present system, they cannot reach the market with any prospect of successfully competing with other cottons. Supposing even the Jyepoor government to consent to reduce its duties, that will not be sufficient, so long as cotton in its transit along 100 miles is exposed to the exactions of 27 petty feudal chieftains, each of whom levies on an average 1½*p.* on every maund, it is impossible that trade can flourish. The mode of dealing with the question proposed in the Lieutenant-governor's minute above mentioned is the most practical that occurs to him, but it will require a strong and a firm hand to place an effectual check on these exactions.

7. Mr. Allen in his letter gives many interesting particulars regarding the cotton trade, and the price at which cotton can be furnished, as proved by Mr. H. Bell's operations.

8. The Lieutenant-governor is anxiously expecting the resolution of the Honourable Court upon his proposal of 16th December last, No. 678 A, to continue the experiment for another year. Mr. Bell naturally presses for an answer, as his private transactions in the ensuing season must greatly depend on the determination of Government upon this point. The Lieutenant-governor hopes that he may at any rate be furnished with distinct instructions by the 15th proximo, beyond which he cannot in justice to Mr. Bell delay the final determination.

9. A copy of Mr. Allen's letter and of the first six paras. of this despatch will be sent to Lieutenant-colonel Sutherland for his information.

10. A copy of para. 18 will also be sent to Major Thoresby, Resident in Nepal, with a view to obtaining information as to the value of the cotton trade which passes from Bengal through Nepal into China.

Agra,
31 March 1848.

I have, &c.
(signed) J. Thornton,
Secy. to Govt. N. W. P.

(No. 1, in No. 1289 of 1848.)

From C. Allen, Esq., Civil Service, to J. Thornton, Esq., Secretary to Government in the North Western Provinces.

Sir,

I HAVE the honour in reply to your letter of 30th September, No. 623 A, requesting information on the transit duties on cotton imported into Agra from foreign territories, to state that I have received from Mr. Hamilton Bell copies of the invoices which accompanied the cotton he imported, and I have also made inquiries from the merchants at Agra, who trade most extensively in cotton, and to report as follows:

2. The largest duty is taken in the Jyepoor country, where the European system of having rowannahs was introduced by Major Thoresby, and the transit duty over the whole territory fixed at 10 annas a maund. For the convenience of merchants this is levied at the rate of Rs. 1. 10. per load or pair of bales.

3. The load is 2½ maunds Tonk weight (equal as nearly as may be to 2 maunds 15 seers Company's weight), this, at 10 annas a maund Tonk weight, yields Rs. 1. 11½. per load; but it is customary to return one anna in every rupee, which reduces it to the sum mentioned Rs. 1. 10. per load.

4. Exclusive

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 309

I.
Bengal and
North Western
Provinces.

4. Exclusive of the transit duties town duties are exacted at the several marts. At Charsoo and Chowree Newahee they are about nine annas a load. At Tonk they are three annas, and a second three annas is levied on Tonk cotton at Sawar.

5. After passing through the Jyepoor territory, a duty of seven annas per load (nominally 7½) is taken by the Bhurtpoor officers at Biana. It is stated that the Government receive only six annas, the remaining anna being the fee of the officials.

6. These are the principal avowed duties, but there are no less than 27 thakoors on the road, who exact certain fees which are stated at various sums, but I think the total cannot be less than seven annas a load. Protection from thieves is said to be afforded by some from this payment.

7. The total duties (exclusive of the Company's) on cotton imported from Rajpootana into Agra, are by these accounts Jyepoor Rs. 3. 1. and Rs. 2. 14. per load for Chowree Newahee and Tonk cotton respectively. The Jyepoor currency is about 5½ per cent. more valuable than the Company's, and the load is 2 maunds 15 seers, Company's weight. Reduce these totals, and the duty per Company's maund will be respectively Co.'s Rs. 1. 5. 10. and Co.'s Rs. 1. 4. 7. for those two cottons.

8. The absolute payments made by Mr. Bell on the Rajpootana cottons imported by him, tally as nearly as may be with these statements of the Agra merchants, who varied in their accounts and avoided giving straightforward or clear statements.

	From Tonk.	From Chowree Newahee.
	Rs. a. p.	Rs. a. p.
Jyepoor duty	1 10 1	1 10 1
Bhurtpoor -	- 7 -	- 7 -
27 Thakoors -	- 7 -	- 7 -
At the mart -	- 3 -	- 9 -
At Sawar -	- 3 -	-
TOTAL -	2 14 -	3 1 -

9. In fact, the duties being almost invariably farmed out by the native governments, the demand is not accurately fixed, and the demand declared by the law is generally higher than what is paid. A certain amount of higgling takes place between the farmer of the duties and the merchant, or rather the broker (or agent), for the person who settles and pays the different duties in detail is not the person who imports the cotton; he (the middleman) making a general charge for the whole.

10. The duties on cotton imported from Bagchenee, or any part of Gwalior, are much lower; exclusive of the Company's, the principal duties are those levied by the Gwalior and Dholpoor rajahs, each of whom takes about three annas per Company's maund, and about 1½ anna more is levied by thakoors and other zemindars as fees. Mr. Bell imported from Bagchenee 1,085 maunds of cotton wool at the following charges:

	Absolute Cost.	Average Cost	
		Per Maund.	Per lb.
	Rs. a. p.	Rs. a. p.	d.
First cost of the cotton	6,713 12 6	6 3 -	1·811
The foreign duties	495 10 9	- 7 4	0·134
The Company's duty	570 9 9	- 8 4	0·152
Carriage to Agra	510 12 3	- 7 6	0·137
Cost of bags and miscellaneous items	589 8 -	- 8 9	0·160
TOTAL Cost to Agra - - - Rs.	8,880 5 3	8 2 11	2·394

11. His chief importations, 3,717 maunds 35 seers, were, however, from Rajpootana (Tonk, Charsoo, and Chowree Newahee), as these cottons formed more than half of the despatch to England, and as the first price was lower than that of any other cotton, I have thought it worth while to draw out a statement showing the total and the average cost per maund and per lb. of the cotton in all its component parts from the first purchase in Rajpootana to the delivery at Liverpool. The maund being taken at 82 lbs. and the rupee at 2 s.

	Total Cost.	Average Cost			Remarks.
		Per Maund.		Per lb.	
	<i>Rs.</i> <i>a.</i> <i>p.</i>	<i>Rs.</i> <i>a.</i> <i>p.</i>	<i>d.</i>		
Price of 3,717 maunds 35 seers of cotton in Rajpootana -	17,509 11 6	4 11 4	1.378		
Foreign transit duties - - - - -	5,183 2 4	1 6 4	0.408		
Co.'s duty, 8 annas per maund, received back on exportation -	- - - - -	- - - - -	- - - - -		
Carriage to Agra - - - - -	2,998 14 4	- 12 11	0.236		
Cost of bags, commission, &c. - - - - -	2,431 1 10	- 10 6	0.192		
TOTAL Cost to Agra - - - <i>Rs.</i>	28,182 14 -	7 9 1	2.214	The calculation are made on 3,717 maunds 35 seers or 304,866 lbs.	
Cleaning the 3,717 maunds and 35 seers from dirt and worm-eaten cotton - - - - -	2,304 2 4	- 9 11	0.188		
Screwing at Agra - - - - -	1,836 - - -	- 8 6	0.156		
Freight to Calcutta - - - - -	2,513 11 4	- 11 8	0.213		
Insurance - ditto - - - - -	1,852 13 -	- 8 7	0.157		
Miscellaneous at Agra - - - - -	1,329 6 6	- 6 2	0.113		
Rescrewing the 942 bales in Calcutta - - - - -	1,485 7 -	- 6 10	0.126		
Commission and minor charges, ditto - - - - -	1,467 9 6	- 6 9	0.124		
Freight of 942 bales to England - - - - -	9,420 - - -	2 11 8	0.800		
Insurance - ditto - ditto - - - - -	1,042 6 3	- 4 10	0.088	The calculation are made on 942 bales, or 282,600 lbs.	
TOTAL GROSS COST - - - <i>Rs.</i>	51,375 6 1	- - -	- - -		
Deduct value of refuse cotton, &c. sold - - - - -	2,328 2 11	- - -	- - -		
Net Cost of 942 bales at Liverpool - - - <i>Rs.</i>	49,047 3 2	14 3 9	4.166		

12. In calculating the average cost per lb. and maund of this cotton, the sums realised by the sale of refuse cotton were not deducted, because they are counterbalanced by a deficiency in the weight of the cotton, caused by cleaning. The 3,717 maunds 35 seers purchased by Mr. Bell equal 304,866 lbs., while 942 bales (the quantity sent to England) at 300 lbs. each, equal 282,600 lbs., showing a loss of 22,266 lbs. At Agra the deficiency appeared larger, but the cotton from imbibing moisture gained in weight about 2½ per cent. *en route* to Calcutta.

13. The calculations in the component parts of the cost to Agra, and in cleaning, are made on the quantity bought, viz., 304,866 lbs.; but the calculations after cleaning are all made on the quantity sent from Calcutta, viz., 282,600 lbs., that is, the quantity of cotton on hand at the time has been taken as the basis. The money realised by the sale of the refuse cotton makes the average of the total net cost tally with the totals of the component parts thus calculated to the nearest fraction.

14. The Company's duty paid before arrival at Agra has not been included in the charges, nor has the drawback paid on exportation been allowed for, on the supposition that these will counterbalance each other in all cases.

15. This statement calls forth a few remarks. The first point is the large sum paid in Customs dues. In my former letter I supposed that these would be not less than 20 per cent. on the first cost of the cotton, but they have proved to be 29½ per cent., and if the Company's import duty be added, the charge is not less than 40 per cent. on the first cost of the article. The next item is the carriage to Agra, the distance may be taken at 160 miles. This gives a charge of 2½ pence per mile per ton, taking the ton at 1,500 lbs., which is, I believe, the weight of a ton of pressed cotton by measurement.

16. Notwithstanding these heavy charges, the cost of Rajpootana cotton at Agra is not higher than cotton grown in the neighbourhood, and large quantities are annually imported into Agra. It is difficult to find out the exact quantity, but I would not estimate it at less than 50,000 maunds annually. It is not easy to comprehend how the people of Rajpootanah afford to grow cotton at so low a rate, and I hope that it is in a great measure owing to the superior productiveness and hardness of the variety. I do not believe that it is the soil alone or the difference of the land tax which enables the Jyepoor cultivator to produce his cotton at five-eighths of the cost of the cotton of the Doab or Bundelcund.

17. Mr. Bell tells me that he has heard that large quantities of Rajpootanah cotton have been taken this year to Sukkur for transport down the Indus: as the land journey is thus considerably more than doubled, the fact appears important, and as by that route the Jyepoor territory is, I suppose, avoided, it may persuade the chief of that country to lower his duties.

18. It may not be out of place to say a few words regarding the importance of the cotton trade at Agra, and the consequent advisability of relieving it as much as possible from all duties and restrictions. During last year 231,883 maunds of cotton wool crossed the Customs

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 311

I.
Bengal and
North Western
Provinces.

toms line by the three chowkies of Pangree, Bickpooree, and Kukooba, which enclose Agra to the westward, and 94,078 maunds more were imported across the line at the chowkees of Futtehabad, Bah, and Burpooree to the south. It is impossible to say what quantity of cotton comes from the Dooab and this side of the river within the Custom line to Agra; but I should say that more than half a million of maunds, or say 140,000 bales annually leave this for Mirzapore, which is the cotton mart of Upper India, and the price there rules the price at Agra, Hatrass, and the other subordinate marts. The merchants here say that considerable quantities of cotton are sent from Mirzapoor to Patna for transmission up the Gunduck across Nepal and the mountains to Thibet and the western provinces of China.

19. To return to the statement: the next item calling for notice is the cost of cleaning. This was all done by hand, and was very expensive; the charge will in future years be diminished; something will be effected by machinery, and expertness will be gained by practice; even last year the cost of cleaning was not so heavy at the end as at the beginning of the season.

20. The cost of screwing reminds one of the double charge for that operation here and in Calcutta. At present this cannot be avoided, for there are up the country no double screws, or screws sufficiently powerful to prevent the necessity of re-pressing in Calcutta. Mr. Bell, however, intends, should the experiment be persevered in, to send to Calcutta for one or two of these superior screws. Eventually the powerful Colaba press, recommended so strongly by Mr. Mather, will probably be required here.

21. The freight to Calcutta is not high; the transport by the boats of the country is no doubt very slow, but the charge is only two-fifths of a penny per ton per mile, taking the distance at 800 miles, which is the distance by land between Agra and Calcutta.

22. The charge for insurance appears very high; it is 80 per cent. more than from Calcutta to Liverpool. At present natives refuse to underwrite, partly perhaps because it has not been the custom to send cotton hence direct to Calcutta, but eventually they will consent to take risks, when the present exorbitant rates must fall. The charge for commission, 2½ per cent., is high in Calcutta, but no reduction at present there can be expected. The freight to England, 5*l.* a ton, was higher than the usual range, and more than will be on an average charged.

23. In conclusion, I would say that a reduction may be expected in many of the charges, and more especially in the first cost of the article at Agra, if the supposition be correct that the Jyepoor variety of cotton is more productive than any known in the Dooab. On this point, I would observe that the natives expressed themselves to me with more exultation about the Jyepoor variety than any other sown by Mr. Bell, and were more anxious for the seed.

Agra, 16 March 1848.

I have, &c.
(signed) C. Allen, C. S.

(True copy.)

(signed) J. Thornton,
Secy. to Govt. N. W. P.

(No. 2004 of 1848.)

From J. Thornton, Esq., Secretary to the Government, North Western Provinces, to G. A. Bushby, Esq., Secretary to the Govt. of India, Home Department, Fort William.

Sir,

I HAVE the honour to acknowledge the receipt of your letter, dated April 15th last, regarding the experimental cultivation of cotton in the approaching season. The Lieutenant-governor has also had before him a copy of the Honourable Court's despatch, Revenue Department, No. 2, dated 21st March 1848,* which was forwarded direct by the Secretary at the India House. Revenue Depart-ment.

2. The correspondence, as per margin,† with Mr. Bell will show how the transaction now stands. The cotton of last season, with the exception of about 100 bales, will be disposed of without loss in this country, and there will be no further advances for next year.

3. Mr. H. H. Bell has very justly observed, that it is not easy to reconcile the opinions that have been expressed at different times regarding the staple of the very same cotton. The position that has all along been assumed by Mr. Bell was this, that if he could find a cotton which, though of shorter staple than the American, was yet capable of being used by the manufacturer, he would furnish it at a price which would enable him to bring it profitably to the market. In 1846 he was assured by Messrs. Duckworth & Co. that some

* See page 264.

† From Mr. Bell, dated April 27th; from Mr. Bell, dated May 1st; to Mr. Bell of this date; from Mr. Bell, dated 9th May 1848, with enclosures.

I.
Bengal and
North Western
Provinces.

some bales of cotton, which he then had sent home on his own account, answered this condition. In 1848 he is told that the same cotton, prepared in the same way, is not adapted for the purposes of the manufacturer on account of the inferiority of the staple.

4. It is probable that these discordant opinions may be explained by the different states of the market in 1846 and 1848. At the former period trade was active, and there was a spirited demand for cotton. At the latter period trade was depressed, and commercial failures, combined with political convulsions, made every person averse to enter upon new speculations.

5. However that may be, it is evident that the cotton sent home in 1848 is not of a quality which satisfies the conditions of the English market, and it is useless sending home more. Some new and more promising kinds of cotton have been raised during the last season from seed procured in the neighbourhood of Jeypoor. It has been favourably reported on by the brokers in Calcutta and by the manufacturers at Gloster Mills. This, to the extent of 50 bales, and the same quantity of the best quality of the other cotton prepared in a particular method, making in all 100 bales, will be sent home this year, but the rest will be sold in this country.

6. Mr. Bell will continue his experiments to discover a superior kind of cotton, but they will be on a small scale, and will not require the support of the Government.

7. The Honourable Court have noticed in the last paragraph of their despatch that the cotton received per "Surat" was inferior in "colour and cleanness to the samples previously forwarded." Of this there is no doubt. The samples were more carefully cleaned than the whole dispatch could be. They were intended as specimens of the staple. The failing of the present dispatch is in staple more than in colour and cleanliness, and that is the point for which it is difficult to account.

8. As regards the point of condition, it is not easy to reconcile the two reports forwarded by the Honourable Court as having been made by the two Manchester Chairmen. Mr. Bazley observes that its "clear and open condition render it more desirable." Mr. Turner says, that "there is no one good point about it," and designates it as "rubbish." The other opinions received by Mr. Bell coincide with the former of the above.

9. The result, then, of what has now been done, is this:—

First The Bagchenee cotton cultivated by Mr. Bell, though much superior to the common Doab cotton, is not calculated for the purposes of the European manufacturer,

Second. Cotton in a clean and desirable condition can be landed at Liverpool for $3\frac{1}{2}d.$ the pound.

Third. Machinery may be largely employed for cleaning the cotton as well as freeing it from seed. A useful machine called the thresher is used for the former purpose, but the latter is still a desideratum.

10. There is still good reason to believe that in a period of greater commercial activity than the present, the path which has now been marked out may be followed with advantage to this country as well as to the English manufacturers.

11. The Lieutenant-governor thinks it due to Mr. H. H. Bell to state that the exertions of that gentleman have been unintermitting and very public spirited. Mr. Allen's assistance has also been most cheerfully rendered, and in itself highly valuable.

12. It will be the Lieutenant-governor's object to have the results of this experiment reduced to the form of a narrative and made public, so that the experience which has been acquired may not be lost.

I have, &c.
(signed) *J. Thornton*,
Secy. to the Govt. N. W. P.

Agra, 19 May 1848.

(No. 1, in No. 2004 of 1848.)

From *H. Hamilton Bell*, Esq., Agent Government Cotton Experiment in the North Western Provinces, to *J. Thornton*, Esq., Secretary to Government, North Western Provinces, Agra.

Sir,

I BEG you will do me the honour to place before the Honourable the Lieutenant-governor the following remarks on the cotton experiment, the details of which he was pleased to entrust to my management.

I have delayed till now this report, in the expectation of receiving from Liverpool this information, without which any conclusion I could have formed must necessarily have been entirely conjectural.

That information has at last reached me, and shows that we have been proceeding on unsound data, which seems to render it imperative to suspend existing operations, and withdraw from them, as far as practicable without loss.

With

With the exception of this, I trust inconsiderable deficit in the proceeds of the shipments to England, arising, as will be evident, entirely from the almost unparalleled condition of the home markets, resulting from the great monetary crisis of the past year, and therefore not legitimately chargeable on the experiment, no loss need be incurred on the transactions confided to my care by the Honourable the Lieutenant-governor.

Before advertng directly to the measures adopted here in prosecution of arrangements which were believed to be judicious for the accomplishment of the great object of Government, it seems merely consistent with propriety to notice, as succinctly as may be, the circumstances which led me in the first instance to address the Honourable the Lieutenant-governor on the subject of improvement of the quality and condition of the cotton of this country, so as to render it suitable to the home market.

The relinquishment of the experiments conducted by American planters, under the superintendence of Captain Bayles, in Bundlucund, had shown that the foreign seed which had been tried had failed. My own limited but carefully conducted trials for several successive seasons had been equally unsuccessful, and I was perfectly satisfied any general cultivation was entirely out of the question, as I had the honour of stating to Lord Auckland when the subject was agitated on his visit to Agra. I was persuaded we must recur to indigenous qualities, select the best, and gradually improve their quality by careful cultivation, and especially by selection of seed, and I trusted to this, and great attention in picking the cotton and freeing it from various impurities of leaf, bits of stick, sand, &c., for providing a cotton that might, though not desirable, be not absolutely unserviceable to the manufacturing interest of Great Britain.

I had pursued my experiment with seed of all the cottons enjoying local reputation, and about the time when the experimental establishment at Agra was broken up, was enabled to place before the Honourable the Lieutenant-governor the result of some trifling shipments to England. Copies of the letters as annexed, acknowledging these, seemed to justify the hopes that we had attained the first step, and the arguments by which I sought to induce the Government to support an experiment on a sufficient scale to afford it a commercial character. I respectfully submit that this was no unwarranted assumption. The sale, although insignificant in quantity, was for home consumption, with the remark that had the supply been larger, better prices would have been obtained; and surely this warranted the inference that the cotton was not unsuitable to the home demand.

I particularly request it may be borne in mind, that in the conclusions at which I arrived, and the suggestions I presumed to offer, I was greatly influenced by the striking remarks made to the Directors of the Honourable the East India Company, on the occasion, I believe, of the visit of the Chairman and Deputy to Liverpool on matters connected with some machinery for cleaning cotton, that the condition of the raw material was of even greater importance than length of fibre, as machinery could be adapted to any staple, and that clean cotton of equal quality, and in quantity to insure sufficient supply, was the great point for consideration.

Thus satisfied, and I hope it will be considered not unreasonably, that we had reached the starting point, (and I pray it may be borne in mind that I consider this a *sine qua non* in our undertaking), I looked forward with some confidence to the future for progressive improvement, and I was therefore deeply concerned and disappointed at the contents of letters from Messrs. Rathbone Brothers & Co. of Liverpool, to whom the first year's consignment was made, which at once shows we were proceeding on an unsound basis, and seems to necessitate a suspension of our proceedings. Accompanying are copies of communications from Liverpool, which I beg you to place before the Honourable the Lieutenant-governor for such instructions as he may please to issue.

I must beg leave to draw the attention of his Honour to Messrs. Rathbone Brothers & Co.'s first letter, announcing the arrival of the "Surat," in which part of the varieties of cotton experimentally despatched last year to their address was shipped, and to their appraisement of the several qualities in their letter of the 19th February last. These have been appreciated as nearly as may be as in this bazar, as noticed in the letter to your address under date the 26th March 1847, and it is particularly satisfactory to me to find that my estimation of Bagchenee cotton grown at Oomurghur from imported seed was accurate, and that so far from having depreciated, it is more highly appraised than the same description of cotton imported from Bagchenee. This establishes the perfect suitability of the soil of the Doab for cotton cultivation; a fact which, indeed, has never been doubted, although the preferable quality of the Bagchenee cotton was by some surmised to result from the black soil of that locality. In this respect, therefore, the measures adopted are justified.

The report of Messrs. Rathbone Brothers & Co. is sufficiently discouraging. That the price is not remunerative is comparatively of little moment, for this would have been a mere question of the cost of production and relative value of any other descriptions with which our cotton might have been compared. The declaration of the gentlemen to whom Messrs. Rathbone Brothers & Company showed the musters seems conclusive of the absolute unsuitableness of the cotton for our spinners, and entirely discourages further trials with this description, by which it is evident the aim of the measures in which we have been engaged cannot in such case be realized. I am doubtful if we could look to material improvement of the cotton from what might be considered better cultivation, nor am I by any means persuaded that the native system of agriculture has all the demerits attributed to it by those who decry it, because different from that to which they have been accustomed.

The opinion expressed by Messrs. Rathbone Brothers & Company, and by the gentlemen

1.
Bengal and
North Western
Provinces.

to whom they exhibited musters of the cotton, that our spinners could not use it, is entirely subversive of the object for which the Government experiment was commenced and conducted, and certainly coupled with the former communications from Messrs. Nicol, Duckworth & Co., where the spinners did use the same description of cotton, is singularly embarrassing; the more especially as in that case the cotton was not very clean, and had been cut by the gin, from both of which objections last year's shipments were free. The term fuzzy, by which the cotton is described, does not convey any positive idea to my mind; but I should conceive it to imply a condition induced by the employment of the native churka, which does greatly crumple up the cotton certainly, and gives it an unfavourable appearance. I had perceived this from the first, and was guided thereby in preparing the musters which were sent by Government to the Honourable Court of Directors, by myself to Messrs. Rathbone Brothers & Company, and I annex the opinions obtained by the Honourable the Court of Directors and by Messrs. Rathbone Brothers & Co. on my musters. It will be seen that Mr. Turner remarked quite correctly certainly, that cotton in quantity could not be sent in this condition, and of this I was perfectly aware, but so far from there being any deceit in this, it was evidently proper to show the material as prepared for spinning, before which the cotton undergoes some process analogous to carding, which lays the fibres regularly, and admits of immediate perception of the real length of staple, probably more accurately than under the usual process for its ascertainment. My object in this, was to show what the raw material really was that was offered to our spinners; for I felt that its looks were against it, and it was imperative that we should show the true quality of the cotton we sought to place before the manufacturers of Great Britain, as the first step in our exertions to merit their support.

It will be observed, the samples thus sent were decidedly approved of, and in neither report is there anything to show the cotton was unsuitable. In each the appraisalment was high, from the peculiar cleanness of the musters, the general remark on the quality being that "its shortness of staple, however, still causes it to rank below American."

Yet this identical cotton, from which these very samples were taken, is now declared to be such, that they cannot use it. This assuredly could not have been inferred from the opinions on the musters, and there is certainly something perplexing, to use the mildest term that suggests itself, in the singular discrepancy in one case, of the remarks on the same raw material.

Unfortunately, therefore, we are wandering in the dark, and those to whom we recurred as guides, no doubt unintentionally, have still, in fact, misled us if the cotton be really such as is assumed by one gentleman, which, I confess, from the remarks previously quoted, I have difficulty in admitting to myself, and we have thus failed to obtain the point I hoped we had reached, and on which all the arguments by which I satisfied myself that we were in the right path were based. It seems we have not a cotton which, although not desirable, is serviceable: we have not, though in my mind indispensable, the starting point I assumed we had reached, which justifies speculative expenditure; and I confess I see nothing that can indicate this satisfactorily.

It was evident that the higher the numbers of yarn produced, the cotton, *ceteris paribus*, is superior. Our first discouragement was the report of the Fort Gloster Mills, that no higher than Nos. 14 and 16 could be spun from our cotton; I had previously ascertained that by the hand reel very much higher numbers could be spun, and on receiving this intimation repeated my trials, and ascertained that from No. 42 to 60 was the result, the first being obtained by the hand reel from imported Bagchenee cotton; the latter from a supposed hybrid of this and the Chundehree cotton. In addition, I tried, by the same spinner, some Oomrawuttee cotton spun at Fort Gloster Mills into No. 24. It is manifest, that if Nos. 16 and 42 are the corresponding numbers of yarn obtainable by the Fort Gloster Mills machinery and the native hand reel from Bagchenee cotton, No. 24, which the Oomrawuttee produced at Fort Gloster, should have given No. 62 here, yet the same spinner employed by me here could not turn out above No. 42; and after this I see not how confidence can be placed in such results. There are only two conclusions that offer themselves to my mind, either the Fort Gloster Mills machinery is imperfect, or if this is not the case, our cotton cannot be spun by machinery.

In this latter case machinery in present use is, of course, meant; for we have the declaration of several gentlemen of the first character in the trade, to the deputation from the Court of Directors, who some three or four years since proceeded to Liverpool to inspect some machinery, that what was desired was "cotton of equal quality and properly cleaned, in quantity, for as regarded machinery this could be adapted to any staple." I do not enter into the questions as to whether it is worth while, with advertence to the price of other growths for which present machinery is suited, to alter or construct machinery for our short stapled Indian cotton, even at 3 *d.* per pound, which I imagine the lowest price at which it can be landed at Liverpool, but I may permit myself to remark that this statement exercised considerable influence over my mind in reflecting on the practicability of rendering this country a source of supply of the raw material of our greatest manufacture. In reply to some inquiries made by me of the anomalous out-turn from the same cotton when spun by the hand reel or machinery, I was indirectly informed by some operative assistants at Fort Gloster Mills, that although higher numbers of yarn might certainly be spun by machinery from short stapled cotton than these out-turns, this must be done by a sacrifice of speed quite incompatible with profit, and therefore that no one could use it with advantage; I mentioned this in an interview with the Honourable the Lieutenant-governor the other day, and was much struck by what seems to me the extremely acute remark of Mr.

Allen,

Allen, that it was hardly apparent that this was a necessary result, inasmuch as what was gained in velocity was lost in power, and therefore that a diminished rapidity of movement might be compensated by the greater extent of machinery put in motion by the same power, and consequently of yarn produced. How far this could practically operate, I am incompetent to say, but the remark receives support from the previously noticed assertion that "machinery might be adapted to any staple."

It will be observed that Messrs. Rathbone Brothers & Company remark, that the cotton will sell best for exportation; and this is at least perplexing, for if abroad it should be spun into yarn: it seems singular that foreign spinners can do this with advantage and avail at a higher price, and with all charges of transport of the raw material which our spinners cannot use.

After all, the points for consideration and on which the whole turns are—

Is the machinery in use in England adapted to the description of cotton with which our trials must commence; or can the machinist of that country alter the existing, or construct new machinery, suitable for the staple that can be sent to market?

Will it suit the English spinner to pay at least 3 *d.* per lb. for such cotton relatively to a remunerating price to the American grower for his produce?

Unless these questions can be answered in the affirmative, I very much fear that the experiment into which the Government so liberally and frankly entered on the faith of the assurance I considered justified by the information which I had collected and laid before the Honourable the Lieutenant-governor, and in which I may perhaps in all humility be permitted to remark that I have sincerely and anxiously co-operated in seeking to give effect to his enlightened views, can hardly merit perseverance. In the disappointment I feel, I may be pardoned if I should express my regret that our proceedings should have scarcely met the countenance and support, &c., I anticipated from the great manufacturing interest of England. The vast extent of their operations, the regularity and permanent character of their demands for the raw material of our great manufacture, justify a deference to their opinions; but I think disappointment may be felt at the curt remark which so conclusively disposes of the result of our first step without trial. The annexed extract from my letter of the 21st October, shows that I anticipated and deprecated such foregone conclusions. I think that the interest taken by this Government, in a matter which it should be recollected is of English rather than Indian importance, demanded the utmost co-operation of those who press on the Honourable Court the importance of rendering India a source of supply of cotton, and that they should bear in mind that in the attempt to carry through their wishes, it is their interest alone which is primarily consulted. India has dispensed and can dispense with the cotton trade to England. They obtain for their inferior produce a price which at its minimum equals the rate at which the home market must be supplied with the superior quality, and the inducement to them for improvement is entirely wanting. The strong support of Government, and the exertions of those who seek to render the resources of India subservient to the prosperity of Great Britain, may do much, and I am willing to persuade myself that much is practicable; but to carry through the liberal and enlightened views of Government all must lend a hand, and much depends on the support and co-operation of the vast interest at whose instigation and for whose advantage these efforts are cordially made. I have already expressed my opinion that it is extremely unfortunate the co-operation of Government should be necessary in these experiments; at the same time that I feel it is indispensable. To insure full justice to the trials, the interest of producer and consumer should be identified, and if the Government of India assumed a burthen for the benefit of the mother country, it may at least be expected from those who will derive immediate advantage from these measures, if successful, that they will do their utmost to render this as light as possible. This identical description of cotton had been availed of for home consumption, and therefore it could be used; and I confess I should have anticipated that cotton brought to market under such circumstances would have at least been fairly tried, and not rejected to find a foreign purchaser. It must always be recollected, that this is no speculation of the Government of India; that they are not looking for a market in which they may dispose of the produce of the country entrusted to their rule; but that they are engaged in a great national object, pressed on the attention of the Honourable Court of Directors by a great and influential body, and that they are justly entitled to all the assistance which the cotton manufacturers of Great Britain can afford in an experiment made with a view to their advantage.

The accounts received from England, which declare the Bagchenee cotton unsuitable for home consumption, seem to supersede the necessity of much detail of the proceedings on its cultivation. Our experiment, however, has shown that it retains its locally acknowledged superiority, and therefore we appear to have established the questioned suitability of our soil for the cultivation of this important staple. It may be remarked, that we have introduced a cotton far superior to the Desee, and we have therefore conferred some benefit at least on the agricultural class. It will this season be extensively cultivated, and many zemindars who would not enter into engagements at fixed prices are yet prepared, as a consideration for receiving the seed at the usual price of the Desee, to concede the right of pre-emption of the produce at the market price of the time when it is gathered.

We have ascertained that the Bagchenee or any equally productive cotton can be grown at 7 rupees per Company's maund, and we have determined the charges under present circumstances at which it may be prepared for and conveyed to a market in England; we have approximately seen how far these are susceptible of reduction, and we have I think established

I,
Bengal and
North Western
Provinces.

blished that we can produce to sell in Liverpool at 3 *d.* per lb. It seems unnecessary to minutely particularize the improvements that have suggested themselves, as the most material have not been practically availed of, in consequence of the uncertainty of duration of the experiment. One of the most important would be to press the bales here on the spot for shipment, thus superseding the necessity of repacking, with its various incidental charges, in Calcutta, and probably doing away with all the expense of landing and shipping, and the trial at least would have been made this season had Mr. Mather been able to procure in time the powerful screws necessary for this arrangement.

I regret that I am yet unable to report much progress in the most material of all projected improvements, that of the alterations in the native churka suggested by Mr. Mather, by which he expects greatly to increase their capability, improve their produce, and to prepare them so as to be worked by machinery instead of hand, an object of the highest consideration. To that gentleman every possible assistance has been given by Government, and I had hoped this season to have verified his, as yet, conjectural improvements, but various obstructions have impeded his arrangements, and as yet the result is undetermined. It is, however, satisfactory to know that Mr. Simms decidedly approves of the principle of their construction, and speaks most favourably of the improvement.

The expense of picking and moting the cotton, after it passes the churka, is considerable, and the difficulty of finding a sufficient number of hands for this purpose has proved embarrassing, and has led to the construction of some machinery which considerably facilitates this important operation. A slight alteration in one of these rendered it applicable to freeing the kupas from the quantity of sand and dirt it invariably contains, and the operation seems attended with the considerable advantage of opening out and loosening the fibres of the cotton from the seed, so that the churka works off considerably more kupas thus prepared. The machines only lately brought into operation are unquestionably useful and desirable, but the advantage attending them has not yet been accurately ascertained, though it certainly is considerable.

These are matters of some, nay, under some circumstances, of great consideration certainly; but after all, they are entirely secondary, for the cheapness of an unserviceable article is of little moment. The first and great aim is the production of a cotton that can be used, and till this is attained the reduction of cost to admit of competition for a market is out of the question. To this, and to this alone, our first attention must be given, for till this point has been reached, facts which then might be of great importance are utterly valueless. I thought I had reached this in the Bagchenee, and was satisfied the rest would follow, and therefore, although not very sanguine, still looked without much apprehension to the competition we ventured; but I find I was mistaken, and the greatest difficulty is still to overcome.

The letter I had the honour to address on the 17th December 1847 to Mr. Shakespear, Assistant Secretary, in transmitting some musters of cotton introduced in the past season into this part of the country, as also of some new descriptions, was accompanied by a report on the various qualities, which has I believe been forwarded with the musters to the Honourable the Court of Directors. I consider all of these superior to the Bagchenee, and I know indirectly they have been so declared at Fort Gloster Mills, though I have no official intimation. A few bales of each are on their way to Calcutta for shipment, but scarcely in sufficient quantity, and I think they are well worth a further trial. I wait the report of the Fort Gloster Mills, on four bales sent there to be spun into yarn, before bringing this matter to the notice of Government, for although I do not think their unfavourable opinion would deter me from submitting the suggestions that offer themselves to my mind on this subject, I wish to have the advantage of any remark of theirs by which my views might be supported.

The part that I have taken in the first operations seems to free me from the risk of being considered presumptuous, in noticing the arrangements I should think desirable under present circumstances.

I take it for granted after the letters from England, that the Bagchenee, whether fairly appreciated there or not, must be deemed a failure; that some, I trust inconsiderable, loss must be expected on last season's shipments; that a similar result is almost certain on any future, whilst the same object that induced the former no longer exists, as we are told the spinners will not use our cotton. I am persuaded the cotton will be more profitably realized in this country, and therefore in the face of the uncompromising declaration of Mr. J. A. Turner, in his note to Messrs. Rathbone Brothers & Co., forwarded to the India House, I certainly would not ship the produce now on hand. I still think the time will come when such cotton may be considered something better than rubbish; but Manchester is no market for us whilst this feeling remains.

I would, however, on the whole, send 200 bales of cotton; of these 51 would be composed of the kinds of which musters were forwarded to the India House, and the remainder Bagchenee. The latter I would prepare with the new cleaning machines; and we have fortunately some of our best kupas still on hand for this purpose; and I would desire the whole to be sold at any necessary sacrifice for home consumption, obtaining from the purchaser an accurate return of the result, which would be readily accorded with advertence to the grounds on which this information was solicited; or I would address the manufacturers to spin for account of the experiment the highest numbers of yarn they could reach with this cotton altogether, without advertence to the profitable rapidity of movement to the machinery, compensating them for any loss of time or power arising from the slower rate of motion, the sole object being the production of the finest yarn from the particular

raw

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 317

I.
Bengal and
North Western
Provinces.

raw material. Perhaps some of the great spinners would try this in their zeal for the public benefit, but if not, spinners might be found who could make the trials for a fair consideration. In this way we should determine whether machinery, though unprofitably, could spin our cotton into useful numbers. The adaptation of the machinery to such restricted rate of motion is then the question, and the cost of the raw material, which would be an inducement to the alteration or construction of such machinery.

Soliciting the instructions of Government for my guidance,

Agra, 27 April 1848.

I have, &c.
(signed) *H. Hamilton Bell*,
Agent Govt. Cotton Experiment in N. W. P.

(True copy.)

(signed) *J. Thornton*,
Secy. to Govt. N. W. P.

(No. 2, in No. 2004 of 1848.)

EXTRACT of a Letter from Messrs. *N. Duckworth & Co.*, dated 6th February 1846, submitted to the Honourable the Lieutenant-Governor.

WE have had the samples of cotton per "Bland" examined and valued, and at foot we hand you the particulars. When the bales are landed we shall draw fresh samples, and have another valuation. The staple appears damaged by the process of cleaning; in other respects it is nice cotton, and highly valued, as compared with prices of Surat. We shall of course follow your instructions in selling and remitting the proceeds to Messrs. Palmer, Mackillop, Dent & Co., London.

Value of Cotton per "Bland."

No.	D. & Co.	9 Bales, pretty clean, but rather seedy, fine colour,	} 4 ½ d.
		staple fair length - - - - -	

COPY of Letter from Messrs. *N. Duckworth & Co.*, dated 6th May 1846.

Dear Sirs,

WE are without any of your esteemed favours to reply to; and we now hand duplicate of our last reports and account sales of your small shipment of cotton per "Bland," netting 52 *l.* 17 *s.*, which we shall remit to your London friends.

If you can send us such quality of cotton we would dispose of it, if in larger quantity, at a higher price. Spinners require a large quantity of cotton when the quality suits them; it is not worth their while to change for small lots. With the prospect of a moderate crop in the United States, our market will improve, and we recommend the article to your attention.

We forward, under separate cover, a general price current of East India produce; we think the quotations safe ones. Trade is again rather improving, and money matters are becoming easier. The Manchester market remains pretty steady, with, if anything, an upward tendency.

We are, &c.
(signed) *Nicol, Duckworth & Co.*

COPY of a Letter addressed to Dr. *Royle*, dated London, 24 July.

Sir,

At your request I have examined the small specimens of cotton from Agra. The cotton is perfect as respects cleanness and colour, but the staple is short, and scarcely therefore suitable for general purposes. I do not think it has been much injured in the process of cleaning. If the staple were a little longer,

I.
Bengal and
North Western
Provinces.

and equal in strength to the musters, there can be no doubt, I think, of such cotton entering largely into competition with American, provided it can be produced in quantity. The present value of these is about 6 *d.* to 6 $\frac{1}{2}$ *d.* per lb., the price of middling to fair American, which now rates one halfpenny per lb. lower than on the 1st instant.

(signed) *J. R. Tetley.*

COPY of Reports of 10th June 1847, Liverpool.

WE have carefully examined some samples of cotton which we describe as Surat cotton, perfectly clean, having apparently been carded, and the fibres lying quite regular. The whole are rather below the average length of staple of Surat cotton, though quite equal to it in strength.

No. 1. Coarse and short, value in its present state, probably 6 *d.* per lb.

No. 5. Silky, nearly fair in staple, bright colour, value in its present state, probably 6 $\frac{1}{2}$ *d.* per lb.

The other samples rank between these two, with little variation in quality, probable value 6 $\frac{1}{4}$ *d.* Of course the value must be considered as perfectly nominal, and is placed high in consequence of the cleanness and absence of waste owing to the cotton having gone through some unusual process.

The shortness of the fibre still, however, causes it to rank below American

S. G. Rathbone, Esq., Liverpool.

THE samples being so small it is difficult to judge with accuracy of their respective value; at present, cotton of any of the different growths, if as clean as the samples, would be worth from 5 $\frac{1}{2}$ *d.* to 5 $\frac{3}{4}$ *d.* per lb. In small quantities a higher price might occasionally be obtained on account of the beautiful colour; all the samples are deficient in staple, and seem to differ little from each other in this respect.

The colour and cleanness are admired, and if to these qualities could be added the long staple of the American cotton, their value would rise to 6 $\frac{1}{4}$ *d.* or 7 *d.* If the staple is at all injured by the process of cleaning (whether bowed or ginned) it would be well to attempt to separate only the heavy dirt, sand, sticks, and seed in India. The leaf and light dust being better removed by English machinery.

It is understood here that less injury is done in cleaning by the bow than the gin, the latter being used only on account of its greater cheapness. Experience, however, will show which process is best; as far as it is possible to judge from such small samples, a preference would be given to Nos. 1, 2, and 4. No. 5 seems to have also a fine silky character. Their chief fault is that of short staple.

EXTRACT of Letter of 21st October 1847, to the address of Messrs. *Rathbone Brothers & Co., Liverpool.*

I CONFIDE entirely in your obliging assistance to aid us in carrying out our present attempt to render India a source of supply of cotton for the home market, and am fully persuaded you will adopt the most judicious measures for this object. I am satisfied the best we can now do is the production of a cotton which may not be unserviceable, and all I want from the consumers is, that they will so far support us as not to disregard our shipments, although they may not be precisely the description of cotton they desire. Each season will, I trust, exhibit considerable improvement, and progressively, I almost confidently hope, we shall render the produce of these provinces generally suitable for home consumption, though we may fail to approach the highest qualities.

(signed) *H. Hamilton Bell.*



Per Overland, *viâ* Marseilles, Liverpool, 19th February 1848.

H. H. Bell, Esq., Agra.


I.
Bengal and
North Western
Provinces.

Dear Sir,

THE "Surat," from Calcutta, having arrived on the 8th instant, the experimental cotton by her has been landed and carefully examined. We describe and value it as follows; viz.

	per lb.
 J 64 bales (2 over), fair to good fair, fully fair colour, but little dirty, 3½ d.	3½ d.
M 41 bales (1 over), fair, fair colour, rather leafy, value - - -	3½ d.
Q B 25 bales (1 over), fair, fair colour, rather leafy, value - - -	3½ d.
G 23 bales (3 short), fair to good fair, fully fair colour, but little dirt, 3½ d.	3½ d.
S 21 bales, fair, fair colour, rather leafy, value - - -	3½ d.
T 236 bales (1 over), fair to good fair, fully fair, a little leaf - - -	3½ d.
B C 155 bales (7 over), good fair, good colour, but little dirt - - -	3½ d.
 B C } 280 bales (8 over), nearly good fair, good colour, but little dirt ~	3½ d.
845 bales.	

This cotton appears to be similar to that which used formerly to be received under the name of Bengal; they are very short indeed in staple.

None landed of the
mark  16 bales.

We are, &c.
(signed) Rathbone Brothers & Co.

From Messrs. Rathbone Brothers & Co. to H. H. Bell, Esq., Agent to the Hon. Company's Cotton Experiments of the North West Provinces, Agra.

Dear Sir,

Liverpool, 23d February 1848.

SINCE we addressed you on the 6th instant we have received your esteemed favours of the 8th and 23d December, contents of which we duly note for your guidance.

We observe that it can neither be the wish of Government that their cotton should be sold under the influence of the failures here, nor that it should be held for the chance of a failure in the American crop, and that we are not to realise to a loss, say at a lower price than 4½ d., without communicating with the Honourable the Court of Directors. We presume you merely mean by the influence of the recent disasters, forced sales under pressure, as we fear we must for years feel their secondary effects in want of confidence and somewhat restricted trade. At present the money market is very easy to parties of undoubted credit, or having security to offer.

We observe we are to remit the proceeds of cotton when sold in bills of the Honourable Company on the Bengal Presidency. We are much pleased to see that some of the cotton in preparation for this year is of superior quality, and we trust that this superiority chiefly consists in the increased length of its staple.

We have now to advise the arrival of the "Surat," with 845 bales of cotton, of which we hand you description and valuation, and we are very sorry that, after the care that has, from the condition of the cotton, evidently been used in their preparation, it should be so unfavourable. We have sent samples to the two associations in Manchester, and, awaiting their report, we showed the cotton to the chairman of one of them, J. Aspiral Turner, one of the largest users of Surat, and who has taken the most active interest in the experiments; and we also showed it to Mr. Pilkington, one of the most extensive dealers and manufacturers. They both said they could not use it on account of the shortness of

I.
Bengal and
North Western
Provinces.

the staple, and that it would only be taken in England for making common weft yarn. When there has been time to get the reports from the two Chambers of Commerce in Manchester, and from other manufacturers, we will wait upon you with them, and advise you what instructions we may receive from the Company as to the disposal of the cotton. It will sell best for export owing to its colour and cleanliness. Its sole defect is like that of most of the Bengal cotton, its short fuzzy staple, which leads our home manufacturers to prefer the Surat cotton, though inferior in colour and cleanliness. You will best be able to judge whether this defect may be best remedied by the introduction of the best seed from the Surat district or from America, and we need hardly add that if you should wish it from the latter place we should have much pleasure in getting it. The cotton grown from American seed would now sell at within a trifle of the price of middling American, which latter is now worth $4\frac{1}{2}d.$ per lb.; that is, such cotton as was received last year.

The ^{B.C.} 16 bales Bagchenee ginned cotton have been mixed in stowing with the other marks, or there must have been some over owing to the delay in the Dock Company in rendering the landing accounts. We have been unable to get them set right in time for this mail, but will have it looked into.

Trade continues in a very depressed state in Manchester. You will observe that we have had a rise in the price of cotton owing to a reduced stock. The estimates of the American crop vary from 2,000,000 to 2,300,000, the majority estimating 2,100 to 2,200 bales. We have been very sorry for the wide-spread distress which must be the consequence of the disasters in the East India trade; but we think it proper to mention to you that we are not personally losers by any of them; indeed the gloomy views we had formed of the consequences of the immense engagements England had entered on, and the consequent profuse expenditure, prevented the last year from being an unprofitable one to us.

The position of the bank is now strong, and we shall probably have some months of an easy money market; but we fear we are still spending too much on railways.

We ought to have mentioned that if we receive orders to sell the cotton, we should ask a higher price than the relations we have given; but there is so little demand for such cotton for home use that its value is somewhat uncertain. We have checked our own broker's opinion by that of some others of the best judges of Surat and Madras cotton among our brokers.

You will remark that the B.C. 148 bales, to which you called our attention, is the cotton preferred here.

With the assurance of our utmost endeavours to give effect to your views,

We remain, &c.
(signed) *Rathbone Brothers & Co.*

From Messrs. *Rathbone Brothers*, of Liverpool, to *H. H. Bell*, Esq., Agra,
dated 6 March 1848.

Dear Sir,

WE have just received your valued favour of 29th January, but not in time to answer by this opportunity. It enclosed invoice of the cotton per "Surat" and "Guisachen," and we notice the extra expenses, which will not be incurred in future. We will cast these accounts out, and then reply next mail to such parts of your letter as have not been replied to in anticipation by our prior letters.

Our present letter serves to cover duplicates of our reports of the 19th and 23d February, and copies of our letters to Mr. J. C. Melvill, enclosing the reports of the Chamber of Commerce at Manchester. Upon the cotton per "Surat" we were not directed by you to communicate with the Company's authorities on this side; but as you instructed us not to sell the cotton under $4\frac{1}{2}d.$ per lb. except under directions from the Honourable East India Company, we concluded you wished us, should that price not be obtainable, to refer to them.

The

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 321

The "Guisachen" has arrived, and is discharging. By next opportunity we hope to hand you description and valuation of her cotton.

The unsettled state of affairs on the continent has depressed prices of cotton of American growth $\frac{1}{2}d.$ to $\frac{3}{4}d.$ per lb. Surats are not quoted lower, but would not realise such full prices as before the French news arrived.

We are, &c.
(signed) *Rathbone Brothers & Co.*

I.
Bengal and
North Western
Provinces.

COPY of Letter to *J. C. Melvill, Esq., &c. &c.*, East India House.

Sir,

Liverpool, 29 February 1848.

You have, no doubt, been advised by Mr. H. H. Bell, agent for the cotton experiment of the Company in the North West Provinces, that he had, by the approval of the Government, consigned to our care the produce of the experiment—845 bales per "Surat," and 813 bales, 5 H. B., per "Guisachen." We now enclose description and valuation of the former; the latter has only just arrived. The valuation of the cotton per "Surat" has been ready some days; but we waited in hopes of receiving from the Commercial Association and Chamber of Commerce in Manchester their report upon the cotton, to forward with our own; but not having yet received it, we send the original valuation forward without further delay, as we have no doubt that their report will confirm ours. Mr. J. Aspinall Turner, the chairman of the Commercial Association, has already seen the cotton, and confirms entirely the description and report given. The cotton has also been shown to the principal buying brokers here, and to the largest sellers of Surat, and also to Mr. Pilkington, one of the largest cotton dealers and manufacturers. We regret to say that all the reports agree in stating that the shortness of the staple is a defect rendering them of comparatively little value to our home manufacturers, though they seem to have been prepared with very great care, and rendered as valuable as the original quality of the cotton would admit.

The mark B. C. 148 bales, to which Mr. Bell drew our especial attention, is, you will observe, the best. We are glad to hear from Mr. Bell, that in this year's experiment some cotton of a different and superior description will be found. We trust the improvement will be in the length of staple and fibre of the cotton; and we have written to Mr. Bell, stating that it is to this point, in our opinion, that attention must be directed. He will be the best judge whether it is to be accomplished by the introduction of seed from America, or from the best of the districts which supply the Bombay market, whence the cotton comes very superior in this respect.

Such cotton as that per "Surat" generally brings the highest price for export to the Continent; and previous to the political disturbances in France we should have tried, if directed to sell, to obtain a somewhat higher price than that given in the valuations. At present our market is quite unsettled, and prices irregular. Mr. Bell directed us that we were not to sell the cotton at a lower price than would cover cost and charges, say $4\frac{1}{2}d.$ per lb. in all, unless we had directions from the Company to do so. You will see we cannot expect to realise this limit without a general rise in the price of cotton, and we should therefore be obliged by the instructions of the Company as to what course we are to pursue.

We need hardly say that if the Company should wish for seed from America, or to have the cotton tested by the manufacturers, every effort on our part shall be used to give effect to their wishes, and to carry out an experiment so important to the manufacturing interests of this country and the prosperity of India.

We have, &c.
(signed) *Rathbone Brothers & Co.*

COPY of the Report of *J. A. Turner*, Esq., Manchester.

Commercial Association, Manchester, 2 March 1848.

Messrs. *Rathbone Brothers & Co.*, Liverpool.

Dear Sirs,

I HAVE just returned from London, where I have been engaged chiefly with the subject of cotton cultivation in India, and I am compelled to set off again to-night to give evidence to-morrow before Mr. Bright's Committee.

This must account for my seeming neglect in not sending you a report on the Agra cottons; I did, however, report upon them to the chairman and deputy chairman, with whom I had a long interview on Monday; and I am in such great haste to-day, that I must content myself with saying generally, that the whole of these cottons are unsuited for spinning purposes in this country; they have not one good point about them, being of bad colour, short staple, and by no means free from dirt and stained locks of cotton. They may be sold for export, but I think they could not be sold here. If the India Company are spending money in the cultivation of such rubbish as this, they may as well give up the attempt at once. As to value, I should think $3\frac{1}{4}d.$ to $3\frac{1}{2}d.$ about the rate; but I would not give $3d.$ for them.

Yours, &c.
(signed) *J. A. Turner.*

COPY of the Report of *J. Bazley*, Esq., Chairman to the Manchester Chamber of Commerce.

Chamber of Commerce, Manufacturers, Manchester, 1 March 1848.

Messrs. *Rathbone Brothers & Co.*

Gentlemen,

I HAVE been duly favoured with your letters of the 21st and 29th ultimo, as well as with the samples of East India cotton to which you refer.

The staple of this cotton is so very short, poor, and insufficient, that the spinner could only apply it to the commonest and most inferior purposes, though the clear and open condition of it would render it most desirable. If the quality were as good as the condition, this cotton would be a great boon to our important trade, but its general merits place it so much below the useful American class, that it must be greatly improved before it could rank with the latter.

Yours, &c.
(signed) *J. Bazley.*

COPY of Letter to *J. C. Melvill*, Esq., Secretary East India House.

Liverpool, 3 March 1848.

J. C. Melvill, Esq., &c. &c., East India House.

Sir,

WE had the honour to address you on the 19th ultimo, respecting the Agra cotton per "Surat" and "Guisachen."

We now beg to hand you the reports of the chairman of the two associations in Manchester, which you will observe agree with our previous report with regard to the staple; you will remark, however, that Mr. Turner's opinion on the other points is by no means borne out by the other reports. Most of our principal brokers here have seen the cotton, and all agree that it is very good of its kind, as Bengal, and desirable for export; an exporter now is very
anxious

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 323

anxious to have the offer of it, and would, we think, give about 4 *d.* per lb. as middling; the staple quality of American cotton is only worth 4 $\frac{3}{4}$ *d.* per lb.; this shows that it by no means deserves the name of rubbish.

Waiting your instructions,

We have, &c.
(signed) *Rathbone Brothers & Co.*

(True copy.)

(signed) *J. Thornton,*
Secy. to Govt. N. W. P.

I.
Bengal and
North West
Provinces.

(No. 3, in No. 2004 of 1848.)

From *H. H. Bell, Esq.,* Agra, to *J. Thornton, Esq.,* Secretary to the Government of North Western Provinces, &c., &c., &c.

Sir,

In the letter I had the honour of addressing you on the 27th ultimo, I took the liberty of dissuading the shipment of the cotton of the current season to the English market, on the ground of its being declared such as the spinners would not use, and its more satisfactory realization in India; and with reference to that view, I beg to notice, for submission to the Honourable the Lieutenant-governor, the following as an adjustment I am prepared to carry out, to escape from the possibility of reproach of having for my own purposes injudiciously engaged the Government on an experiment involving pecuniary loss.

The advances of the season amounts to one lac and ten thousand rupees (1,10,000 rupees), increased in a trifling degree by remains of seed, old bagging, &c., of last year's operations, and I propose to assume this as a personal debit to be liquidated as follows:

I am the more disposed to do this in consequence of the large and disproportionate balances from the *suttahdars*, partly, indeed, resulting from hail, and still more from the worm, which in some villages caused great destruction; but also partially attributable to insufficient vigilance caused in some degree by the privation, from indisposition of supervision, on which I had placed my great reliance. Though extremely to be regretted, from the character of the people, who rarely pay unless constrained, these are for the most part, if not entirely, with very few exceptions recoverable by management, and gradually without litigation, except for the sake of example with the most refractory. They amount to rather more than 23,000 rupees, and for these I will render myself responsible, engaging to pay 12,000 rupees on the 31st December next ensuing, and 11,000 rupees on the 31st December 1849.

This would leave about 88,000 rupees to be provided for by the cotton, of which there are (8,000 maunds), eight thousand maunds, a few more or less, which will cost as near as may be 11 rupees per maund, delivered in Calcutta, and will, I think, sell there to net that price. I propose to despatch them to the consignment of Messrs. Mackillop, Stewart & Co., in my capacity of Agent of the cotton experiment of North Western Provinces, both because this is likely to ensure greater attention in the sale, and that it retains for Government the full security whilst unsold, and the realization of the entire proceeds under instructions to the consignees to pay these, as realized into the public treasury, for account of this government.

In the event of the cotton realizing less than the balance due on the debt assumed by me, I will make good such deficiency, and if the proceeds paid into the Treasury exceed this amount, credit shall be given me for any surplus in liquidation of my engagement for the balances above noticed.

It is understood that it is open to Government to direct the shipment to England of any portion of the cotton they may think fit, intimation of their pleasure being made on or before the 1st June next ensuing. In such case the price of the cotton sent, as its cost delivered in Calcutta, and all expenses of shipping, receiving, &c., are to go in reduction of the balance, for which I am answerable.

Agra,
1 May 1848.

I have, &c.
(signed) *H. Hamilton Bell,*
Agent Cotton Experiment N. W. P.

(True copy.)

(signed) *J. Thornton,*
Secy. to the Govt. of N. W. P.

I.
Bengal and
North Western
Provinces.

(No. 4, in No. 2004 of 1848.)—(No. 2002 of 1848.)

From *J. Thornton*, Esq., Secretary to the Government of North West Provinces, to *H. H. Bell*, Esq., Government Agent for the Experimental Growth of Cotton, Agra.

Revenue Depart-
ment.

Sir,
I AM desired by the Honourable the Lieutenant-governor to acknowledge the receipt of your letters of April 27th and May 1st and 9th, regarding the experimental cultivation of cotton.

2. An early opportunity will be taken of bringing before the Honourable the Court of Directors your remarks upon the opinions expressed in Europe on the consignment of 1846-47. The Lieutenant-governor is persuaded that these opinions have been much influenced by the depressed state of the cotton market and manufacturing interests at home.

3. Your proposed arrangements for the consignment of 1847-48, which is now in process of despatch, are approved, but in conformity with your own subsequently expressed wish, the quantity which is to be despatched to England may be reduced to 100 bales, of which 50 will be the finer sorts, marked J. S. and B., and the remaining 50 bales will be your best Bagchenee, which has been cleaned by the threshers, so that the effect of that instrument on the staple may be ascertained. The remainder of the cotton, amounting to more than 1,000 bales, may be sold in this country to the best advantage, as it is evidently useless to send it home.

4. Your arrangements about the balances of last season, as detailed in your letter of May 1st, are approved.

5. You will be pleased to arrange with Mr. Allen how the lien of the Government, both on the produce of 1847-48 and on the balances, can be best secured.

6. As regards the coming season of 1848-49, you will observe, from the annexed copy of a letter from the Honourable Court of Directors (No. 2 of 1848,) dated March 21st,* that they are desirous that the operations be brought to an immediate close. His Honour understands that you entertain the same wish, so far as the pecuniary advances for cultivation are concerned. The further efforts you propose for discovering superior indigenous cotton will be at your own expense and risk. Every assistance will still be afforded you in the construction of improved machinery for the processes of cleaning and ginning.

7. At the same time that the Lieutenant-governor deeply laments the disappointment of the expectations of success which had been raised regarding this cotton, he is satisfied that no effort has been wanting on your part to ensure a successful result. He bears willing testimony to the liberality and public spirit which have marked your proceedings throughout, and he still entertains the hope that your persevering efforts may hereafter, in more propitious times, meet with a better reward.

I am, &c.
(signed) *J. Thornton*,
Secy. to the Govt. of N. W. P.

Agra, 19 May 1848.

(True copy.)
(signed) *J. Thornton*,
Secy. to the Govt. of N. W. P.

(No. 5, in No. 2004 of 1848.)

From *H. H. Bell*, Esq., Agra, to *J. Thornton*, Esq., Secretary to Government North West Provinces, Agra, &c. &c. &c.

Sir,
In the last paragraph of the letter I had the honour to address you on the 27th ultimo, I took the liberty of expressing my opinion that it would be desirable to ship this season 200 bales of the cotton produced under the experiment committed to my management.

Bales 51 to be of the new descriptions, of which samples had been forwarded, and the remainder,
149 to be Baugchenee, prepared by the new cleaning machine.

200

Having subsequently been instructed that the Honourable the Court of Directors have directed the discontinuance of the experiment, as not likely to lead to the results I had anticipated, and having received Messrs. Rathbone Brothers and Co.'s further advices of the present and probable future state of the market, I would now venture to suggest that the quantity of Baugchenee be restricted to 49 bales, and that in the whole 100 bales only be sent.

sent. I think it extremely desirable that some Baugcheenee should go, to afford, by comparison with the new descriptions, the means of judging whether we have made the progress supposed, the more so, as this is partly admitted in the Report of the Fort Gloster Mills, which I have had the honour to place before the Honourable the Lieutenant-governor for his information, together with the letter to my address from Mr. J. H. Mather, in which it was enclosed. I further beg permission to add copy of a letter to my address, of the 3d instant, from the highly respectable brokers, Messrs. Colin Campbell and Burgess, of Calcutta, on the subject of two of the musters of new cotton.

If the opinion expressed on these statements be supported in England, it will at once appear that the measures adopted here were conducive to the object the Government desired to accomplish.

I have, &c.
(signed) H. H. Bell.

Agra, 9 May 1848.

(True copy.)
(signed) J. Thornton,
Secy. to Govt. of N. W. P.

EXTRACT from Revenue Narrative, No. 4, dated 26th December 1849.

COTTON.

Para. 43. In consideration of the failure of the crops, Mr. H. Bell requested that the arrangement which he had entered into for the recovery of outstanding balances on account of the cotton experiment be so far modified as to extend the payments for another year. His Honour, under the peculiar circumstances of the case, was pleased to acquiesce in that gentleman's proposal. The payments which should have been made in 1848 might therefore be made in 1849, and those of 1849 in 1850.

Collection, No. 1
Extending payment
of the outstanding
balances for
another year.
Paras. 71 & 72,
Narrative, No. 3
of 1848.
Revenue Proceed-
ings, July 1849,
Nos. 90 & 91.

43. The Government of India forwarded copy of a despatch from the Honourable Court on the subject of the cotton cultivation in the North Western Provinces, desiring a statement showing the results of the experiment, and promising to send out some new machines, denominated "cottage saw gins." In reply, the Lieutenant-governor transmitted copy of a letter addressed to Mr. H. H. Bell, who was understood to be preparing a statement such as that required, and which he hoped soon to receive. With advertence to paragraph 3 of the despatch, the Lieutenant-governor observed that the subject of the customs duties in Rajpootana was fully discussed in his Honour's minute, dated 10th August 1847, which was submitted for the consideration of the Right honourable the Governor-general. Subsequent experience had greatly strengthened his Honour's conviction of the feasibility and expediency of the plan suggested. It would be gratifying to him to know that it had met with the support of the Most Noble the Governor-general, and that there was any prospect of its early sanction.

Cotton cultivation
in the N. W. P.
Cottage saw-gins
&c.
Revenue Proceed-
ings, August 1849,
No. 190 to 193.
Revenue Proceed-
ings, September
1849; Nos. 164
165.

46. The Government of India having subsequently intimated that on the receipt of the cottage saw gins, such as were not required for Bengal would be forwarded to Agra, the Collector of the Agra district was requested to receive charge of them on their arrival, and to make over to Mr. H. H. Bell as many as he might need.

EXTRACT from the Proceedings of the Honourable the Lieutenant-Governor of the North Western Provinces, in the Revenue Department, of the 17th July 1849.

No. 90.

From H. H. Bell, Esq., to J. Thornton, Esq., Secretary to Government of North Western Provinces.

Sir,

Agra, 30 June 1849.

I HAVE to request that you will submit, for the consideration of his Honour the Lieutenant-governor, the following request, and circumstances under which it has been made.

When, in my somewhat indiscreet zeal to relieve Government from all risk of loss in the cotton experiment, which had originated on my representation, I offered to put myself in their place, subject to the liquidation of their advances from the realization of the existing stock of cotton and other dependencies, I incautiously engaged to be answerable for the outstanding balances, assuming these as realizable in two years, in which I promised to pay the amount of 12,000 rupees in all 1848, and 11,000 rupees in all 1849.

296—Sess. 2.

S S 3

It

I.
Bengal and
North Western
Provinces.

It was clear I could derive no personal advantage from this, and might experience some loss; but I certainly did not anticipate this, and imagined that the definite obligation I had assumed could not inconvenience me, as I was sure of making the collections within the stipulated time.

Under common circumstances my expectations would have been realised; very nearly 10,000 beegahs of cotton were cultivated, and I was justified in calculating that, at the average out-turn, the land rent and two-thirds of the balances would be realised.

That this result did not ensue arose entirely from the failure of the cotton crops of the season, so generally as to be almost universal. A very large proportion of the cultivation, comprising nearly all the first sowings, was a total loss, and ploughed up for the rubbee crop, and of the latter somewhat unseasonable sowings, which promised a moderate out-turn, much was destroyed by the few frosty nights in December, so that from more than one-half the cultivation nothing whatever was obtained, and from the rest insufficient to pay the land rent. In my own villages nearly 2,500 rupees arrears of rent arising from this cause were incurred. In one of these I had a very considerable seer cultivation, and the kupas, carefully watched and picked, was only worth seven-eighths of the rent, seed, irrigation, and all charges, being a total loss.

The small quantity of kupas received from villages under my absolute control did not suffice to reimburse the outlay I had been obliged to make on assisting the ryots to weed and effectually irrigate their fields, and its quality was so inferior, that I was not desirous of receiving it. Instead of yielding from 33 to 40 per cent. of cotton as previously, the highest outturn was 25 per cent., the fibre harsh, and shorter than that of the common Dessee cotton. I might have proceeded against the Bakeedars* for their balances, but such proceeding would have been harsh, when they had given such unquestionable evidence of their desire to liquidate them, as, including rent, their loss cannot have been less than two rupees per beegah. In many cases legal measures might have been ineffectual, and as a mere question of advantage it appeared to me preferable to grant them time.

I intimated this to Mr. Allen, whilst officiating Secretary to Government, as having, moreover, been the usual medium of communication in all matters connected with cotton arrangements, and begged him to place before the Honourable the Lieutenant-governor my request that the arrangement to which I had agreed might be so far modified as to extend the payments for one year, thus making the payments in all 1848 claimable in all 1849, and those of 1849 in all 1850. I have taken every step in my power for the early realization of the amount now due, and anticipate a favourable result in consequence of the late rains.

By a note from Mr. Allen, I find that the informality of my communication with him deprives it of the character of an official document, which is requisite, and therefore I am under the necessity of intruding upon you, requesting you to place the matter before his Honour. With the loss to which my want of caution has exposed me, the Government has, of course, nothing to do; but as my arrangements avowedly contemplated the liquidation of my engagements from the realization of assets and balances, I trust that my request will meet the favourable consideration of Government.

In my latest communication from Messrs. Mackillop, Stewart & Co., of Calcutta, they mention their expectation of being enabled shortly to transmit accounts of the result of the shipments to China.

I have, &c.
(signed) H. H. Bell.

(No. 2372 of 1849.)

No. 91. From J. Thornton, Esq., Secretary to Government of North Western Provinces, to
H. H. Bell, Esq., Agra.

Sir,

Revenue Depart-
ment.

IN reply to your letter of 30th ultimo, I am desired to inform you that the Honourable the Lieutenant-governor has been pleased, under the peculiar circumstances of the case, to acquiesce in your proposal to extend the payments of the outstanding balances of the cotton experiment for another year. The payments which should have been made in 1848 may therefore be made in 1849, and those of 1849 in 1850.

Head Quarters,
17 July 1849.

I have, &c.
(signed) J. Thornton,
Secy. to Govt. of N. W. P.

Copy of Correspondence sent to Mr. C. Allen in continuation of Docket of 19 May 1848.

* Defaulters.

EXTRACT from the Proceedings of the Honourable the Lieutenant-Governor of the North Western Provinces, in the Revenue Department; dated 28 August 1849.

(No. 98.)

From Sir *Henry Elliot*, K. C. B., Secretary to the Government of India with the Governor-General, to *J. Thornton*, Esq., Secretary to Government North Western Provinces.

No. 190.

Sir,

I AM directed by the Most Noble the Governor-general to transmit to you, for the information of his Honour the Lieutenant-governor, the accompanying copy of a despatch from the Honourable the Court of Directors, on the subject of the cotton cultivation in the North Western Provinces, and promising to send out some new machines denominated "Cottage Saw Gins."*

Home Department,
Revenue Department, No 4, dated
27th June 1849.

Simla, 20 August 1849.

I have, &c.,
(signed) *H. M. Elliot*,
Secretary to the Govt. of India with the
Governor-General.

The following letters are written :

(No. 2865 of 1849.)

From *J. Thornton*, Esq., Secretary to Government North Western Provinces, to *H. H. Bell*, Esq., dated 28 August 1849.

No. 192.

Sir,

I AM directed to transmit the accompanying extract, paras. 1 and 2, of a despatch from the Court of Directors, No. 4, of 1849, regarding the cotton cultivation in the N. W. Provinces, and to observe, that the Lieutenant-governor understands that you are now preparing a statement showing the pecuniary results of the experiments, and hopes that he may soon have the satisfaction of receiving it.

Revenue Department.

Head Quarters, 28 August 1849.

I am, &c.
(signed) *J. Thornton*,
Secy. to Govt. N. W. P.

(No. 75 A.)

From *J. Thornton*, Esq., Secretary to Government North Western Provinces, to Sir *Henry Elliot*, K. C. B., Secretary to the Government of India with the Governor-General; dated 28 August 1849.

No. 193.

Sir,

WITH reference to the Court's despatch, No. 4, of 1849, which accompanied your letter dated 21st inst., I am directed to transmit copy of a letter this day addressed to Mr. H. H. Bell, and to observe with advertence to para. 3 of the despatch, that the subject of the Customs duties in Rajpootana was fully discussed in the Lieutenant-governor's Minute, dated 10 August 1847, and which was submitted for the consideration of the Right Hon. the Governor-general.

Revenue Department.

2d. Subsequent experience has greatly strengthened his Honour's conviction of the feasibility and expediency of the plan then suggested. It would be gratifying to him to know that it met with the support of the Most Noble the Governor-general, and that there was any prospect of its early sanction.

Head Quarters, 28 August 1849.

I have, &c.
(signed) *J. Thornton*,
Secy. to Govt. N. W. P.

* See Page 969.

I.
Bengal and
North Western
Provinces.

No. 164

EXTRACT from the Proceedings of the Honourable the Lieutenant-Governor of the North Western Provinces, in the Revenue Department; dated 18 September 1849.

(No. 551.)

From *W. Grey*, Esq., Under Secretary to the Government North Western Provinces, to *R. Thornton*, Esq., Assistant Secretary to Government North Western Provinces.

Home Department,
Revenue.

* Revenue, No. 5
of 1849, dated
27th June.

Sir,

WITH reference to the despatch from the Honourable the Court of Directors, noted in the margin,* a copy of which will doubtless have been communicated by the Secretary to the Governor-general, I am directed by the President in Council to state, for the information of his Honour the Lieutenant-governor, that the Government of Bengal has been directed, on receipt of the cottage saw gins, after reserving as many as may be required for Bengal, to forward the remainder to Agra.

I have, &c.

(signed) *W. Grey*,

Fort William, 18 August 1849.

Under Secretary to the Government
of India.

The following letter is written to Collector of Agra:-

No. 165.

(No. 3020.)

From *R. Thornton*, Esq., Assistant Secretary to the Government North Western Provinces, to *C. C. Jackson*, Esq., Collector of Agra.

Sir,

Revenue Depart-
ment.

I AM directed by the Honourable the Lieutenant-governor to transmit to you the accompanying copy of a letter, No. 551, from the Under Secretary to the Government of India, Home Department, dated the 18th ultimo, and to request that you will receive charge of the cottage saw gins therein mentioned on their arrival, and make over to Mr. H. H. Bell as many as he may require.

I am, &c.

(signed) *R. Thornton*,

Head Quarters,
18 September 1849.

Assistant Secretary to the Government,
North Western Provinces.

Copy forwarded for the information of Mr. Bell.

(True extracts.)

(signed) *W. Blackburn*,
Reporter of Proceedings.

EXTRACT from Revenue Narrative, No. 3, dated 20 October 1851.

COTTON.

Collection, No. 4.
Adjustment of
Accounts of the
Cotton Experi-
ment, paras. 43 &
44, Rev. Narr.,
No. 4 of 1849.
Rev. Pro. August
1850, No. 318 &
319; Rev. Pro.
April 1851, No. 60
to 69.

43. Mr. Allen, with reference to orders of the 27th August 1850, submitted Mr. Bell's accounts of the cotton experiment for the year 1847-48. These papers having been examined in the Accountant's office, the result was shown in a memorandum, dated March 31, 1851, with reference to which the following orders were passed.

44. The three items marked (A)* were, as recommended by Mr. Allen, debited to the experiment.

45. The

* (A) To sundries over-estimated	-	-	-	-	-	Rs. 1,301	-	-
Estimated sale of seed, less realized	-	-	-	-	-	600	-	-
Old taut ropes, &c. over valued	-	-	-	-	-	200	-	-
						<u>Rs. 2,101</u>	-	-

45. The item marked (B)* would be debited to the experiment, and adjusted with the Home Government, in the same manner as other similar items.

46. The cost of the cotton lost by the burning of a boat in the Ghazee-pore District, it had been already determined, was to be borne by the Government. The sum of 271 rupees, realized by the sale of the damaged cotton, would be credited to the experiment, and the balance, Rs. 6,891. 8., debited to the same head.

47. The sums (D)† and (F)‡ had been credited in the public Treasury. The charge (E)§ was sanctioned, and would be debited against the experiment, as should also the item H (Rs. 255. 1. 10. for stores from the magazine) or such portion of it as might ultimately be found due.

48. The Lieutenant-governor accepted Mr. Allen's recommendation that the balance (G)¶ of Rs. 24,589. 10. 3., still due from Mr. Bell, should be received from him in two equal instalments on the 31st December 1851, and the same date of 1852.

49. His Honour thanked Mr. Allen for his services in adjusting this account, and begged he would express to Mr. Bell the regret which was experienced at the loss which he appeared to have sustained in this public-spirited effort. His Honour could not renounce all hope that benefit would yet result from these exertions; and it would give him great satisfaction if they proved the means of ultimately opening out a field of mercantile enterprise to Mr. Bell himself.

EXTRACT from the Proceedings of the Honourable the Lieutenant-Governor of the North Western Provinces, in the Revenue Department; dated 27 August 1850.

The following letters are written:—

(No 743 A.)

No. 316.

From J. Thornton, Esq., Secretary to the Government of the North Western Provinces, to H. H. Bell, Esq.

Sir,

I AM desired by the Honourable the Lieutenant-governor to call your attention to the purport of my letter of July 17, 1849, copy of which is annexed, and to beg that you will favour him with information as to the adjustment of the accounts to which that letter alludes.

Revenue Department.

2. The accounts of the last year of the experimental cultivation of cotton under your superintendence have not yet been furnished. It would be most satisfactory to the Lieutenant-governor to receive these accounts on the earliest practicable date; and he trusts that their transmission will not be delayed.

3. The

* (B) Shipment of Cotton per "Palestine"	-	-	-	-	-	Rs. 4,341	15	9
Charge on ditto	-	-	-	-	-	411	5	8
						Rs. 4,752	11	5
† (D) Treasury Receipt to C. Allen, Esquire	-	-	-	-	-	Rs. 33,525	13	9
Ditto	-	ditto	-	-	-	2,562	6	6
Ditto	-	ditto	-	-	-	14,005	4	3
						Rs. 50,692	8	6
‡ (F) Engagements payable 1st week of December 1850	-	-	-	-	-	Rs. 12,438	15	-
Ditto	-	-	on 31st December 1850	-	-	11,000	-	-
						Rs. 23,438	15	-
§ (E) Sundry charges	-	-	-	-	-	Rs. 935	15	6
¶ (G) Balance still due from Mr. Bell or Mr. Allen	-	-	-	-	-	Rs. 24,589	10	3

I.
Bengal and
North Western
Provinces.

3. In addressing to you this communication, the Lieutenant-governor has in constant recollection your public-spirited exertions for the improvement of the cultivation, both in connexion with the Government during the prosecution of the experiment, and from your own resources, both before and after that period. To these exertions he will always be prepared to bear ready testimony, and suitably to acknowledge the consequent obligations under which you have laid the public, and the Government which is charged with promoting the national interests. But his Honour is bound to remember that he must render a true and faithful account of all public money, for the disbursement of which he has been the advocate and the channel. It is much the subject of regret that he has been unable as yet to discharge himself of this duty; and he trusts that you will place it in his power speedily to do so.

I have, &c.
(signed) *J. Thornton,*
Secy. to the Govt. of the N. W. P.

Head Quarters,
27 August 1850.

No. 319.

(No. 744 A.)

From *J. Thornton*, Esq., Secretary to the Government of the North Western Provinces, to *C. Allen*, Esq., Civil Service, Futtyghur.

Sir,

Revenue Depart-
ment.

I AM desired to forward for your information the annexed copy of a letter this day addressed to *H. H. Bell*, Esq., regarding the accounts of the last year of the experimental cultivation of cotton.

2. The Lieutenant-governor has had much reason to thank you for the cheerful and valuable assistance you rendered him through the progress of this interesting experiment. Without the prospect of your assistance he would have hesitated to embark in an undertaking of that magnitude. Your familiarity with the whole subject, and your aptitude for details of this kind, renders your aid peculiarly desirable in finally closing the accounts, and summing up the whole proceedings.

3. The arduous duties of your present office, perhaps, leave you little leisure for the performance of work extraneous to your proper sphere; but the Lieutenant-governor will feel himself under peculiar obligations to you, if you will point out how the accounts can be finally closed, and the transaction terminated. Any assistance which can be of avail to you will be readily granted, and if your temporary relief from your present duties, and your further presence at Agra, would enable you to accomplish the object, your wishes to that effect will be consulted.

I have, &c.
(signed) *J. Thornton,*
Secy. to the Govt. of the N. W. P.

Head Quarters,
27 August 1850.

EXTRACT from the Proceedings of the Honourable the Lieutenant-Governor of the North Western Provinces, in the Revenue Department; dated the 7th of April 1851.

(No. 60.)

From *H. H. Bell*, Esq., to *J. Thornton*, Esq., Secretary to the Government of the North Western Provinces.

Sir,

I HAVE received the honour of your letter of the 21st ultimo, with its enclosures. I perfectly recognise the obligation the last imposes, and I have to express my regret that any deviation from its conditions should have arisen. The payment of the sum for which I pledged myself will, however, take place within the limitation intended in the letter you refer to, although the first instalment has, by circumstances, quite beyond my control, been, most unexpectedly by me, delayed for some months.

I will

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 331

I will see to forwarding the accounts desired as quick as possible. They now necessarily form themselves into a mere open cash account for the responsibilities I assumed.

I am extremely obliged by your communication of the Honourable the Lieutenant-governor's sentiments; the only claim to which I make any pretension is unremitting, if not always very judicious zeal. I confess I regret the trial of this was not prolonged. I still retain implicit confidence that as the new system came into work, its advantages would fully have developed themselves, unluckily too late now for the expected emergency to which our manufacturers must look from short American crops. On the trifling scale my ability admitted, I persevered in my trials, and I trust that my small shipment on its way to England will not pass unnoticed there, for it was far more with the object of justifying the confidence his Honour was pleased to place on my exertions, than to seek personal advantage, that the trifling consignment was made. The present expression of his sentiments more than repays me, and leaves me without a wish for anything further. I regret his enlightened views were checked, but their revival could not affect me individually.

Oomurghur, 6 September 1850.

I have &c.
(signed) H. H. Bell.

I.
Bengal and
North Western
Provinces.

From C. Allen, Esq., Civil Service, to J. Thornton, Esq., Secretary to the Government of the North Western Provinces.

Sir,

I HAVE the honour to submit Mr. Hamilton Bell's accounts of the cotton experiment for the year 1847-8, as required in your letter, No. 74, dated 27 August last.

No. 61.

2. Mr. Bell's accounts and explanation are dated 5th November 1850, and the last cash payment was made on the 29th of January 1851. This, with my special duties at the Presidency, prevented an earlier compliance with the orders under acknowledgement, and former ones to the same purport.

3. The amount of my debit in the books of the accountant, North Western Provinces, for the cotton experiment, stood at Rs. 1,13,674. 4. 8.; to this was subsequently added, as a matter of account, the sum of Rs. 255. 1. 10. for stores issued from the Agra magazine, but as those stores were returned, with the exception of a few files and perishable tools (see the duplicate receipt, Enclosure No. 5), I have not included the sum. Should the Military Board have advised the Accountant of the value assigned to the returned stores, that value must be deducted from Rs. 255. 1. 10, and the remaining small sum debited to the experiment.

4. Mr. Bell opens his accounts (Enclosure No. 2) with the same balance of Rs. 1,13,674. 4. 8., in liquidation of which he has paid at different times,—

	Rs.	a.	p.
9 Nov. 1848	-	33,525	13 9
19 Feb. 1849	-	2,562	6 6
31 July 1849	-	14,605	4 3
3 Jan. 1851	-	3,686	7 3
29 Jan. 1851	-	19,752	7 9
		<u>Rs. 74,132</u>	<u>7 6</u>

	Rs.	a.	p.
In cash - - - - -	74,132	7	6
A hundred and two bales of cotton shipped to Liverpool in September 1848, with Calcutta charges on the same - - - - -	4,752	11	5
Cotton boat lost near Ghazeeepore, insured by Government, under orders dated 14 March 1848 - - - - -	7,162	8	-
Sundry charges not debitible to Mr. Bell for bill (Enclosure No. 3) - - - - -	935	15	6
Sundries over-estimated in closing the accounts of 1846-47 - - - - -	2,101	-	-
		<u>89,084</u>	<u>10 5</u>
Total amount to the credit of Mr. Bell - - - - -		24,589	10 3
Leaving a balance realizible from Mr. Bell - - - - -			
	<u>Rs.</u>	<u>1,13,674</u>	<u>4 8</u>

5. The cotton shipped to Liverpool realized a net sum of 363 l. 12 s. 6 d., as per copy of account sales, Enclosure No. 6; the cotton was sold on the 17th of February 1849, at 3½ d. per lb. all round, and the money paid into the Home Treasury, apparently on the 2d of June 1849.

332. PAPERS RELATING TO MEASURES TAKEN

<i>Rs. a. p.</i>	<i>£. s. d.</i>
4,752 11 5 at 2s.	- 475 5 5
	363 12 5
	<u>£. 111 13 -</u>
4,752 11 5 at 1s. 10d.	435 13 4
	363 12 5
	<u>£. 72 11 -</u>

6. Taking the exchange at 2s. the rupee, the net loss (course Mr. Bell has nothing to do) of this transaction, was 100 at the exchange of the day, say 1s. 10d. the rupee, the loss 72l. 0s. 11d.

7. The item of Rs. 7,162. 8. is a regular charge, for Government insured the cotton a trifling quantity of the cotton was recovered and sold by the magistrate, Mr. French the proceeds, Rs. 271, carried to the credit of Government.

8. The item of Rs. 935. 15. 6., detailed in the voucher No. 3, was expended in experiments on cotton cleaning machinery, and there can be no question of the propriety of it once passing the bill, and charging it to the experiment.

Balances due from parties who died before Mr. Bell made himself responsible	<i>Rs.</i>	1,301
Property over-estimated in striking the balance of 1846-47	600	200
Total	<u>Rs. 2,101</u>	

9. The item of Rs. 2,101 is composed of three sums, and Mr. Bell, in the second paragraph of his letter, Enclosure No. 1, gives strong grounds for admitting the charge. The balances to the extent of Rs. 1,301, had become irrecoverable before Mr. Bell engaged to make them good, he consequently pleads that he is not liable, and the other sums arose from a quantity of cotton seed and other property not realizing the amount expected, and properly the previous year's accounts should be debited with the sum of 800 rupees or 600 + 200.

10. With a very strict audit, there might be a question regarding this item of Rs. 2,101, but I am of opinion that the charge is equitable under the circumstances.

11. The remaining balance of Rs. 24,589. 10. 3. Mr. Bell proposes to pay in two equal moieties, on the 31st of December this year, and on the same date next year, 1852, and he claims this indulgence on the ground that he has been a large pecuniary loser by his public-spirited exertions, attended with great labour and anxiety to himself.

12. There can be no doubt that Mr. Bell has been a great loser, but as he has declined to show the whole of his accounts I cannot tell the exact amount, which, indeed, materially depends on his ability to realize the outstanding balances, shown in Enclosure No. 4 to be Rs. 13,802. 9.

13. It has been a great disappointment to me not to receive the detailed accounts, but when Mr. Bell took the responsibility of the whole venture, he acquired the right of keeping all particulars to himself.

14. The Honourable the Lieutenant-governor is so fully aware of the energy and ability, with which Mr. Bell has applied so much of his valuable time to the personal superintendence of every detail in the experiment, that any notice from me on the subject would be supererogatory.

15. When Mr. Bell undertook the whole money responsibility, it is self-evident that he could reap no pecuniary benefit from the change, for by the previous arrangement he was entitled to any profit that might accrue, and he is now made a debtor to the State, through, to use his own words, "his zeal to relieve Government from all risk of loss in the cotton experiment, which had originated on his representations."

16. If detailed accounts had been furnished, I think it would have been my duty to request his Honour to relieve Mr. Bell, in some measure, if not altogether, from the absolute pecuniary loss, but, under the circumstances, I merely mention the fact, and beg that he be at least allowed the indulgence desired, of two years' grace to pay his liabilities.

17. I could wish, in sending up the accounts, to have given a summary of the whole proceedings, and I still hope Mr. Bell will be persuaded to record his experience, but without his aid and without full information from him, I feel unable to renew the experiment.

18. The two years 1846-47 and 1847-48 were the most unfortunate ones that could have been selected as regards prices in England, which is the ingredient of most consequence.

	<i>£. s. d.</i>
Indian charges at 2s. the rupee	- 475 5 5
Liverpool charge	- 72 11 5
	<u>347 16 10</u>
29,906 lbs. at 4½ d. per lb.	- 545 3 2
	<u>£. s. d.</u>
Indian charges at 1s. 10d. the rupee	435 13 4
Liverpool charges	- 72 11 5
	<u>508 4 9</u>
29,906 lbs. at 4⅞ d. per lb.	- 506 4 6

19. It has, however, been proved that good marketable cotton can be bought cleaned in this country and landed at Liverpool, with all charges paid, for 4½ d. per lb. when the exchange is at 2s. the rupee, and for 4⅞ d. per lb. when the exchange is at 1s. 10d. the rupee. Such cotton was at the most depressed period of the trade readily bought at an average of 3½ d. a lb. I believe this average to be accurate for the first year as well as the last, but as all the papers regarding the shipments of 1847 are not with me in Calcutta, I cannot speak positively.

20. This result on the worst exchange, that of 2 s. the rupee, entails a loss of 111 l. 12 s. on a total outlay of 547 l. 16 s. 10 d., or 20 per cent. The percentage of loss on the former shipments was very similar, but I believe rather less. The present price of cotton in England is fully 80 per cent. higher than it was in 1848, and a shipment in 1850 would have resulted in a gain of 44 per cent. instead of a loss of 20, for the price in this country has, through all fluctuations in the English market, remained nearly stationary, the cotton markets of the North Western Provinces depending chiefly on the China and home trade.

21. In former letters of the dates noted in the margin, reporting on the first year's operations, I classified the average cost of each pound, from its first purchase in Rajpootana to the delivery at Liverpool, and the total cost, exclusive of the charges at Liverpool, was 4½ d. per lb. I have no further experience, except as to the total cost, which is nearly the same, being 4½ d. per lb., inclusive of the Liverpool charges, which were 10 l. 6 s. 3 d., or about 1/7 of a penny. I am still of opinion that this cost can be materially reduced, particularly in the charges for cleaning and screwing, and with reference to cotton purchased in Rajpootana, in the charges for transport and custom duties.

22 September 1847.
9 February 1848.
16 March 1848.

22. English capitalists should not themselves attempt the culture of cotton, but buy it on the spot unseeded, as far as possible, purchasing only the best sorts, clean it carefully, pack it and despatch to the port for shipment to England. By culture the capitalists cause balances, which not even the experience of Mr. Bell could avoid.

23. The objection made to the cotton in England was the shortness of the staple; the colour, condition and other qualities were all good; it was solely on account of this defect, which it was supposed could not be remedied, that the Honourable Court decided that the experiment should be closed.

24. It has been said, and there is, I should fancy, but little doubt of the fact, that machinery could be made to suit any length of staple, were it equal, and the quantity abundant. This grand, if not sole objection, is, therefore, entitled to little weight, and would probably never have been advanced had the trade been more flourishing than it was in 1848.

Calcutta, 14 March 1851.

I have, &c.
(signed) C. Allen, Civil Service.

From H. H. Bell, Esq., to C. Allen, Esq., Civil Service, Futtyghur.

Sir,

IN conformity with your desire, I have the honour to place before you a statement of the account arising from the transfer to me of the operations previously conducted, as the cotton experiment of the North Western Provinces.

These papers speak for themselves, and call for few observations. It may, however, be desirable to advert to the few articles, partially written back, for the balance transferred of the year 1846-47. The amount stated as irrecoverable balances, arose from the death of the parties insolvent, though at the time not known or suspected to be so, and when that which was assumed to be an existency was found not to be so, it does not seem unfair that the amount should be written back. In the same way it was assumed that the cotton seed to be distributed amongst the puttahdars would yield a certain amount. As the estimate was not reached, it seems but reasonable to expect that the excess credited should be returned. The bags, taut and other materials connected with the experiment were only reasonably valued. Had the experiment been maintained in use, they were worth the money, but when the operation was relinquished their value in exchange was widely different.

My expressed estimation of the value of the assets was, that they would produce more than their cost, and I distinctly stated that my ability to provide adequate funds for the transfer without trenching on resources applied to my more immediate pursuit by the withdrawal of its requisite capital was contingent on the realization of the property transferred. This has failed to suffice for the payment of the obligations I incurred, and I shall, on the 31st December next ensuing, have paid - - - - - Rs. 13,962 6 3 more than I have received, which, with the actual balance of - - - - - 23,589 10 3

will, on the whole, cause me a loss not less than - - - - - 37,552 - 6

against which there only stands the possible realization from the uncollected plant-balances, of which I am encouraged to hope that 10,000 may be got in in two years, although I fear that much must be recoverable from legal measures, which hitherto I have eschewed; if so fortunate, my loss will be reduced to Rs. 27,552. 0. 6.

It is but just to myself and the unfortunate barkedars to state, that the existing balances arise from no neglect or want of effort on our parts. The past season, after the relinquishment of the cotton experiment, I had a cultivation of 10,000 beegas. In many of the villages there was a total failure; in others, the partial return was absorbed by the Government revenue, and I believe I might say that in most cases the return was quite inadequate to the rent of the land. In that year we got in 5,677. 1., when an average crop would have sufficed to liquidate the whole balance. Subsequently, seeing the impossibility of effectually watching the crops when necessity pressed on the ryot, I recurred to indigo, as being scarcely liable to be clandestinely carried off. The cultivation has, in the last two years, suffered to a degree beyond my experience in the last 25 years; otherwise, excepting absolutely irrecoverable balance, nearly all would have been got in, as I trust will be the result in the two next seasons.

Under these circumstances, and adverting to the labour and anxiety that have attended

I.
Bengal and
North Western
Provinces.

* A clerical error for
Rs. 24,589. 10. 3.,
signed C. Allen.

me in the transaction, as well as my motive for the arrangement which created my personal liability, I trust the Government will not object to my confident expectation of being permitted to pay the balance of credit, Rs. 23,589. 10. 3,* in two years, in nearly equal instalments; viz., 12,000 rupees on the 31st December 1851, and Rs. 11,589. 10. 3. on the 31st December 1852, thus terminating this adventure, which circumstances beyond control have rendered unfortunate. There may have been errors in the management inseparable from an undertaking entirely novel, but these alone would never have produced materially unfavourable results. The great commercial crisis in England, and the consequent reduction of the price of cotton of all descriptions, injurious as it was, did not affect the principle of the operation, and had not disturbances arisen in China it would have wound up with little loss, and positive advantage to the general trade. We are rapidly disseminating the superior for the inferior qualities of Desee cotton, and we had admittedly attained, or are attaining, one of the great desiderata, by replacing with well-cleaned cotton the foul and dirty description usually shipped, almost as much objected to on this account as for shortness of staple.

Even in this latter point, of which I admit the difficulty, because beyond control, it will be seen, I hope, when a small shipment I have made to Liverpool is reported on, that we were progressing. A hasty and intemperate expression put a bar to our proceedings, I think, to be regretted, for I still retain my first opinion that the measure I presumed to press on the attention of the Honourable the Lieutenant-governor was desirable, and not undeserving the support his liberality conceded.

Agra, 5 November 1850.

I have, &c.
(signed) H. Bell.

No. 63.

COTTON EXPERIMENT under Supervision of C. Allen, Esq.

		Cr.		Rs. a. p.	
		By Balance of Account of 1846-47, as made up and rendered on 7 September 1849, including sundry estimated existences to be carried to new year of experiment		33,674	4 8
1847:	July - -	" Treasury Drafts, Accounts of Advances, No. 1	Rs. a. p. 20,000 - -		
	October - 13	" Treasury Drafts, Accounts of Advances, No. 2	30,000 - -		
	November 9	" Treasury Drafts, Accounts of Advances, No. 3	20,000 - -		
1848:	February 27	" Treasury Drafts, Accounts of Advances, No. 4	10,000 - -		
				80,000	- -
				Co.'s Rs. 1,13,674 4 8	
		Dr.			
		To sundries over-estimated in balance transferred from 1847			
		" Balances absolutely lost by death of Suttahdars at this date			
1848:		" Estimated sale of seed realized less		1,301	- -
	September 19	" Old taats, ropes, &c. for bagging, overvalued		600	- -
		" Shipment of cotton per " Palestine " to the address of Company's Liverpool agent		200	- -
		" Charges on ditto, paid to Mackillop & Co.		4,341	5 9
	November 9	" Cotton boat lost near Ghazeepeer		411	5 8
		" Treasury receipt to C. Allen, Esq.		7,162	8 -
1849:	February 19	" - ditto - - - ditto		33,525	13 9
	July - 31	" - ditto - - - ditto		2,562	6 6
		" Sundry charges connected with, but distinct, as matter of account, from cotton experiment		14,605	4 3
		" My engagements, payable first week, 1/7, December 1850		935	15 6
		" My engagements, payable first week, due on 31st December 1850		12,438	15 -
		" Balance of this account		11,000	- -
				24,589	10 3
				Co.'s Rs. 1,13,674 4 8	

Agra, 4 November 1850.

(E. E.)

(signed) H. H. Bell.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 335

NOTE of sundry Disbursements, distinct from Cotton Experiment Account, incurred from August 1848 to October 1850.

I.
Bengal and
North Western
Provinces.

WAGES ACCOUNT:	Rs. a. p.	Rs. a. p.	No. 64.
Paid sepoy in charge of cotton-gin and press-house across the river, at 3/8 per month, from 1st October 1848 to 31st October 1850 - - - - -	87 8 -		
Paid amount of wages to Golab Khan Mistry, sent up to Julundur in charge of cotton-gin to Dr. Sill to Indore -	35 - -		
Paid to Ram Sing and Dildar Khan, sepoys of old establishment, on their return from Calcutta, and discharge in 1848 - - - - -	46 - -		
Paid Issunchunder Baboo, in charge of Caster House godown, at 5 rupees per month, in January 1849, 35; in January 1850, 70 - - - - -	105 - -	273 8 -	
EXPENSES connected with Mr. Mather's Machinery:			
Paid Mr. Mackenzie for erecting buildings, putting up machinery, &c., for trial of saw machine - - - - -	172 14 3		
Paid to Ingol Kishen, for adding to length of lathe, thatching, and sundry small repairs - - - - -	36 12 -	209 10 3	
Cartage, wages of coolies on many occasions, cost of leather, and wages of mochee preparing leather straps, and various small items connected with trials of Mr. Mather's and other machinery - - - - -		29 3 3	
Charges on account of threshers and churkas, altering and remodelling the same, including 78 rupees paid to Mr. Harcourt to assist him in the construction of his model - - - - -		323 10 -	
Cash paid to Doity Chund Mistry, by order of Lieutenant-governor -		100 - -	
	Rs.	935 15 6	

(E. E.)
Agra, 4 November 1850. (signed) H. H. Bell.

No. 65.)

REALIZATION of Plant Balances of COTTON EXPERIMENT.

Kotera.	Balance of 1847.	Collection of 1848.	Collection of 1849.	Collection of 1850.	Total Collection.	Unrealized.
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
erozabad - -	4,409 4 3	974 8 6	166 6 9	124 13 9	1,265 13 -	3,143 7 3
owain - -	2,541 11 6	378 4 9	92 13 6	168 7 3	637 9 6	1,904 3 -
otky - -	3,508 10 3	466 15 3	783 7 -	377 11 6	1,628 1 9	1,910 8 6
murghur - -	3,184 12 6	1,278 1 6	323 10 9	119 - 9	1,718 13 -	1,465 9 9
ursanah - -	1,548 12 - 6	160 14 -	393 5 6	2 2 3	575 8 9	972 6 9
ookhny - -	264 - 9	58 5 9	3 12 9	32 14 -	95 - 6	169 - 9
urriah - -	1,960 14 -	598 9 6	219 9 9	4 13 3	821 15 6	1,138 14 6
alaysur - -	2,215 15 9	655 13 -	121 2 9	- - -	776 15 9	1,439 - -
mssur - -	1,304 12 -	816 15 6	135 13 6	8 1 9	960 14 9	343 13 3
izampur - -	278 6 -	37 6 3	11 - -	- - -	48 4 9	230 1 9
undrus - -	40 3 6	9 6 -	19 - 3	- - -	28 6 3	11 13 3
hekoabad - -	2,141 13 9	213 15 -	786 3 -	66 - -	1,073 10 9	1,073 10 9
Rs.	23,428 15 -	5,667 1 -	3,055 5 6	903 15 6	9,626 6 -	13,802 9 -

(E. E.)
Agra, 31 October 1850. (signed) H. H. Bell.

I:
Bengal and
North Western
Provinces.
—
No. 66.

(No. 34.)

Agra Magazine Office, 12 July 1848.

RECEIVED into the Agra Magazine, from C. Allen, Esq., Superintendent Cotton Experiment.

Scales, board	-	-	-	-	-	-	-	-	2
Ditto, beam, large	-	-	-	-	-	-	-	-	1
Ditto, chain, pair	-	-	-	-	-	-	-	-	1
Triangle for scales, large	-	-	-	-	-	-	-	-	1
Weights, brass, 8 dozen	-	-	-	-	-	-	-	-	1
Ditto, ditto, 4	-	-	-	-	-	-	-	-	1
Ditto, iron, 56 lbs.	-	-	-	-	-	-	-	-	4
Ditto, ditto, 28	-	-	-	-	-	-	-	-	1
Ditto, ditto, 14	-	-	-	-	-	-	-	-	1
Ditto, ditto, 7	-	-	-	-	-	-	-	-	1
Ditto, ditto, 4	-	-	-	-	-	-	-	-	1
Ditto, ditto, 2	-	-	-	-	-	-	-	-	1
Ditto, ditto, 1	-	-	-	-	-	-	-	-	1


N.B.—The state of the above will be ascertained hereafter.

(signed) C. W. Timbrill, 1st Lieut.,
Offg. Commissary of Ordnance.

(No. 67.)

(Copy.)

ACCOUNT SALES of 102 Bales of Cotton shipped by Messrs. Mackillop, Stewart & Co., per "Palestine," at Calcutta sold by Order and for Account of the Honourable East India Company.

1849:			£. s. d.	£. s. d.
17 February	-	Perkins, Smith & Mullins, 	102 wg. net 29,906 lbs., at 3½d. per lb.	436 2 7
28 February	-	Thomas Heery (pickings)	15 lbs., at 1d. „	- 1 3
			102 Bs. 29,921 lbs.	436 3 10
		CHARGES.		
		Messrs. Mackillop, Stewart & Co., draft for premium of insurance	11 5 -	
		Freight on 102 bales, at 2 l. 10 s. per ton of five bales	51 - -	
		Albert Dock charges:		
		Dock dues, 1 l. 5 s. 6 d.; town dues, 17 s.; entry, 1 s. 6 d.	2 4 -	
		Quay delivery rate on 282 cwt. 3 qrs. 8 lbs. at ½d. per cwt.	- 11 9	
		Piling on the quay - ditto - at ½d. per cwt., 5 s. 11 d.; opening for custom, 2 s.	- 7 11	
		Cartage, 19 s. 1 d.; portorage, receiving and delivering, 1 l. 5 s.	2 4 1	
		Fire insurance on 450 l., at 2 s. 6 d. (one month)	- 11 4	
		Interest and bank commission on charges	- 15 8	
		Rent, 1 l. 5 s. 6 d.; abatement, 7 d.	1 6 1	
		Brokerage, £. ¼	2 3 7	
		Bank of England commission remitting net proceeds, at 6 d.	- 2 -	
				73 11 5
		Net Proceeds, Cash, 2d June 1849	- - - £.	363 12 5

S. D. B. H. 435/6.

Liverpool,
3 March 1849.

(signed) W. Rathbone,
Agent to the Honourable East India Company.

(E. E.)

(True copy.)

(signed) C. Allen.

MEMORANDUM.

(No. 6659.)—(No. 68.)

MEMORANDUM.

Accountant's Office, North Western Provinces, 31 March 1851.

The account rendered by H. H. Bell, Esq., under date 4th November last, to Charles Allen, Esq., and by the latter submitted to Government with his letter, dated 14th instant, regarding cotton experiments, having been sent to this office for examination, the same has been carefully looked through, and the result is stated below.

MR. BELL'S ACCOUNT.	Rs.	a.	p.	Rs.	a.	p.	ACCOUNTANT'S REMARKS.
Balance of account of 1846-47 -	-	-	-	33,674	4	8	
Advance in July 1847 -	20,000	-	-				
Ditto, in October 1847 -	30,000	-	-				
Ditto, in November 1847 -	20,000	-	-				
Ditto, in February 1848 -	10,000	-	-				
				80,000	-	-	
The above advances are thus accounted for by Mr. Bell:—				1,13,674	4	8	
To sundries over estimated	1,301	-	-				
Estimated sale of seeds, less realised	600	-	-				
Old taut, ropes, &c., overvalued	200	-	-	(A.)			-- To this amount, which is correct, should be added Rs. 255. 1. 10., the value of stores issued to C. Allen, Esq., under Government orders, dated 20th September 1848.
				2,101	-	-	-- Mr. Allen recommends these three items being debited to the experiment.—Vide para. 9 of his letter.
Shipment of cotton per Palestine	4,341	5	9	(B.)			
Charges on ditto	411	5	8	4,752	11	5	-- Mr. Allen refers to these two items in his 5th and 6th paras, and states that the cotton has realised a net sum of £. 363. 12. 6., and the money paid into the Home Treasury in June 1849; but whether the amount has been sent out by the Honourable Court of Directors cannot be traced at the Secretariat office. The loss on this shipment will have to be written off under orders of Government, when it is known what the Honourable Court has received.
				(C.)			
Cotton boat burnt near Ghazee- poor	-	-	-	7,162	8	-	-- This is the cost of 716 1/4 maunds of cotton lost by the accident, of which 271 rupees realised by sale by magistrate of Ghazeepoor has been credited in the Agra collector's account for August 1849; the remainder, Rs. 8,891. 8., will have to be written off under Government orders. Mr. Allen refers to this item in the 7th para. of his letter.
				(D.)			
Treasury receipt to C. Allen, Esq.	33,525	13	9				
Ditto - - ditto - -	2,562	6	6	(D.)			
Ditto - - ditto - -	14,805	4	3	50,893	8	6	-- The amounts paid into the public treasuries have been traced as follows:— To credit of cotton experiment at General Treasury, in November 1848 - Rs. 33,525 13 9 Ditto, in February 1849 - 2,562 6 6 Ditto, in July - 1849 - 14,805 4 3 <u>Rs. 50,893 8 6</u>
				(E.)			
Sundry charges	-	-	-	935	15	6	-- Mr. Allen, in his 8th para., recommends this being charged to the experiment.
Engagements payable 1st week of December 1850	12,438	15	-				
Engagements payable on 31st December 1850	11,000	-	-	(F.)			
				23,438	15	-	-- These sums have been paid to credit of cotton experiment, as follows:— Into General Treasury, in } January 1850 - } Rs. 19,752 7 9 Into Cawnpore Treasury, in } January 1850 - } 3,686 7 3 <u>Rs. 23,438 15 -</u>
				(G.)			
Balance still due from Mr. Bell or Mr. Allen	-	-	-	24,589	10	3	-- Mr. Allen refers to this outstanding balance in para. 11 of his letter; but to this amount should be added the value of stores, amounting to Rs. 255. 1. 10., unless it be otherwise adjusted.
							(H.) Mr. Bell's account is not drawn out, as it should have been, in the form of an account current; but it is otherwise clear and correct.
	Rs.			1,13,674	4	8	(signed) C. Grant, Accountant, N. W. P.

338 PAPERS RELATING TO MEASURES TAKEN SINCE 1847

I.
Bengal and
North Western
Provinces.
No. 69.

Revenue Depart-
ment.

The following letter is addressed to C. Allen, Esq. :—

(No. 1359 of 1851.)

From *J. Thornton*, Esq., Secretary to the Government of the North Western Provinces,
to *C. Allen*, Esq.

Sir,

I AM desired to acknowledge the receipt of your letter, dated 14th March last, forwarding the accounts of the cotton experiment for the year 1847-48.

2. The papers having been examined in the Accountant's office, the result is shown in the annexed memorandum, dated March 31st, 1851, with reference to which, the accompanying orders are passed :—

3. The three items marked (A.)* are, as you recommend, debited to the experiment.

4. The item marked (B.)† will be debited to the experiment and adjusted with the Home Government, in the same manner as other similar items.

5. The cost of the cotton lost by the burning of a boat in the Ghazeepoor district, it has been already determined,‡ is to be borne by the Government. The sum of 271 rupees realised by the sale of the damaged cotton, will be credited to the experiment, and the balance, Rs. 6,891. 8, debited to the same head.

6. The sums (D.)§ and (F.)|| have been credited in the public Treasury.

7. The charge (E.)¶ is sanctioned, and will be debited against the experiment, as also the item (A.) Rs. 255. 1. 10. for stores from the magazine, for such portion of it as may ultimately be found due.

8. The Lieutenant-governor accepts your recommendation, that the Balance (G.)** of Rs. 24,589. 10. 3. still due from Mr. Bell, shall be received from him in two equal instalments, on the 31st December 1851, and the same date of 1852.

9. The Lieutenant-governor desires me to thank you for your services in adjusting this account, and begs you will express to Mr. Bell the regret which is experienced at the loss which he appears to have sustained in this public-spirited effort.

10. The Lieutenant-governor cannot renounce all hope that benefit will yet result from these exertions, and it will give him great satisfaction if they prove the means of ultimately opening out a field of mercantile enterprise to Mr. Bell himself.

I have, &c.
(signed) *J. Thornton*,
Secretary to the Government of the N. W. P.

Head quarters, 7th April 1851.

Office of Account informed through the Financial Department N. W. P.

(True extracts.)

(signed) *W. Blackburn*, Reporter of Proceedings.

EXTRACT

* (A) To sundries over estimated	-	-	-	-	-	Rs. 1,301	-	-
Estimated sale of seed, less realised	-	-	-	-	-	600	-	-
Old tant, ropes, &c. overvalued	-	-	-	-	-	200	-	-
						<u>Rs. 2,101</u>	-	-
† (B) Shipment of Cotton per " Palestine "	-	-	-	-	-	Rs. 4,341	5	9
Charges on ditto	-	-	-	-	-	411	5	8
						<u>Rs. 4,752</u>	11	5

‡ Letter from Mr. H. H. Bell to Officiating Secretary to the Government N. W. P. dated 14th August 1848.

Government letter to Accountant N. W. P., dated 7th August 1849, No. 2570.

(D) Treasury Receipt to C. Allen, Esq.	-	-	-	-	-	Rs. 33,525	13	9
Ditto	-	ditto	-	-	-	2,562	6	6
Ditto	-	ditto	-	-	-	14,605	4	3
						<u>Rs. 50,693</u>	8	6
(F) Engagements payable 1st week of December 1850	-	-	-	-	-	Rs. 12,438	15	-
Ditto	-	-	on 31st December 1850	-	-	11,000	-	-
						<u>Rs. 23,438</u>	15	-
¶ (E) Sundry charges	-	-	-	-	-	Rs. 935	15	6
** (G) Balance still due from Mr. Bell or Mr. Allen	-	-	-	-	-	Rs. 24,589	10	3

EXTRACT from Revenue Narrative, No. 1, dated the 5th April 1852.

I.
Bengal and
North Western
Provinces.

COTTON.

62d. WITH reference to orders, dated 11th April last, the officiating Accountant having submitted correspondence relative to the demand of Government against the estate of Mr. H. H. Bell, the Lieutenant-governor approved of the orders issued by him with regard to registering the amount due by the deceased, and requested to be kept informed of the result. His Honor observed that the executors should have every facility they might desire for examining the accounts, and satisfying themselves of the nature of the transaction.

Collection, No. 4.
Demand against the estate of the late Mr. H. H. Bell.
Para. 43 to 49, Rev. Nar., No. 3 of 1851.
Rev. Pro. Oct. 1851, No. 247 to 250.
Rev. Pro. Dec. 1851, Nos. 228 & 229.

EXTRACT from the Proceedings of the Honourable the Lieutenant-Governor of the North Western Provinces, in the Revenue Department, dated 20 October 1851.

(No. 2908 of 1851-52).

No. 247.

From *R. Money*, Esq., Officiating Accountant North Western Provinces, to *J. Thornton*, Esq., Secretary to Government North Western Provinces, Financial Department, Agra.

Sir,

WITH reference to Mr. Officiating Assistant Secretary Sherer's docket, No. 918, dated 11th April last, transmitting for my guidance copy of a letter addressed to Mr. C. Allen, of the civil service at Calcutta, bearing date 7th idem, regarding the cotton experiment accounts, I have the honour to transmit for the information of the Honourable the Lieutenant-governor a copy of the correspondence as per margin.*

I have, &c.
(signed) *R. Money*,
Officiating Accountant N. W. P.

Accountant's Office, N. W. P., Agra,
26 September 1851.

(No. 444).

No. 248.

From *M. R. Gubbins*, Esq., Collector of Agra, to *R. Money*, Esq., Officiating Accountant North Western Provinces, Agra.

Sir,

WITH reference to the 4th paragraph of your letter of the 19th July last, No. 1450, and the Government orders of 7th April enclosed therein, regarding the sum of *Rs.* 24,589. 10. due by Mr. H. H. Bell to Government on account of the late "cotton experiment," I have the honour to report that Mr. Bell died on the 22d instant, and that his estate is in the hands of his executors; Mr. F. R. Neilson and Misr Gobindpershaud. I beg therefore to know whether it is necessary for me to take any and what measures for the recovery of the Government demand, the first instalment of which will fall due on the 31st December 1851.

I have, &c.
(signed) *M. R. Gubbins*, Collector.

Zillah Agra, Collector's Office,
24 September 1851.

(Copy.)

(No. 2907.)

From *R. Money*, Esq., Officiating Accountant North Western Provinces, to *M. R. Gubbins*, Esq., Collector of Agra.

Sir,

IN reply to your letter, No. 444, dated 24th instant, and with reference to the residue of the advance which was made by Mr. C. Allen for cotton, amounting to *Rs.* 24,589. 10., which

* Letter from Collector of Agra, dated 24th instant; and my reply, dated 26th idem.
296—Sess. 2.

I.⁷
Bengal and
North Western
Provinces.

which is in your inefficient balance report, and is proposed to be adjusted by Mr. H. H. Bell in December 1851, and in December 1852, I beg that you will, in consequence of the recent demise of the last mentioned gentleman, put yourself in communication with the executors to his estate, for the purpose of registering this demand of Government, with a view to its adjustment in due course, and advise me of the result.

Accountant's Office, N. W. P., Agra,
26 September 1851.

I have, &c.
(signed) *R. Money*,
Officiating Accountant, N. W. P.

(True copy.)

(signed) *R. Gordon*,
Uncovenanted Assistant to Accountant, North Western Provinces.

The following letters are written :

No. 249.

(No. 3746 of 1851.)

From *J. Thornton*, Esq., Secretary to the Government, North Western Provinces,
to *R. Money*, Esq., Officiating Accountant, N. W. P.

Sir,

Revenue Depart-
ment.

I AM directed to acknowledge receipt of your letter, dated 26th ultimo, No. 2908, and in reply to inform you that the Honourable the Lieutenant-governor approves of the orders issued by you with regard to the amount due to Government by the late Mr. H. H. Bell, on account of the late cotton experiment, and requests to be kept informed of the result.

His Honor desires me to observe, that the executors should have every facility they may desire for examining the accounts and satisfying themselves of the nature of the transaction.

Simla,
20 October 1851.

I am, &c.
(signed) *J. Thornton*,
Secretary to Government, N. W. P.

No. 250.

(No. 3747 of 1851.)

From *J. Thornton*, Esq., Secretary to the Government, North Western Provinces,
to *C. Allen*, Esq., C. S., Calcutta.

Sir,

Revenue Depart-
ment.

WITH reference to letter to your address, dated 7th April last, I am desired by the Honourable the Lieutenant-governor to forward copies of the correspondence noted in the margin* regarding the amount due to Government by the late Mr. H. H. Bell, on account of the cotton experiment.

Simla,
20 October 1851.

I am, &c.
(signed) *J. Thornton*,
Secretary to Government, N. W. P.

EXTRACT from the Proceedings of the Honourable the Lieutenant-Governor of the North Western Provinces, in the Revenue Department; dated 24 December 1851.

No. 228.

(No. 3622.)

From *R. Money*, Esq., Officiating Accountant, North Western Provinces, to
J. Thornton, Esq., Secretary to the Government, Revenue Department.

Sir,

WITH reference to your letter, No. 3746, dated 20th ultimo, I have the honour to transmit, for the information of the Honourable the Lieutenant-governor, copy of the correspondence as per margin,* on the subject of the demand which exists in the Agra collector's inefficient balance against the estate of the late H. H. Bell, and await further instructions from you.

Accountant's Office, N. W. P.,
Agra, 2 December 1851.

I have, &c.
(signed) *R. Money*,
Officiating Accountant, N. W. P.

From

* From Officiating Accountant, dated 26th September, No. 2908, with Enclosure.
To - ditto - of this date.

† Letter addressed to Collector of Agra, No. 3157, dated 21st October 1851.

Reply from Collector, dated 26th November 1851, with copy of Letter from Executor to the estate, dated 20th November 1851 (Land Revenue, No. 3840).

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 341

(Copy.)

(No. 3159.)

From *R. Money*, Esq., Officiating Accountant, North Western Provinces,
to *M. R. Gubbins*, Esq., Collector of Agra.

I.
Bengal and
North Western
Provinces.
—
No. 229.

Sir,

WITH reference to my letter, No. 2907, dated 26th ultimo, I beg that you will, whenever the executors to the estate of the late H. H. Bell may desire it, afford them every facility for examining the accounts connected with the demand of Government, and satisfying themselves of the nature of the transaction.

You will be good enough to inform me (after communicating with the executor) of the probable time of adjustment of the demand.

Accountant's Office, N. W. P.,
Agra, 21 October 1851.

I have, &c.
(signed) *R. Money*,
Officiating Accountant, N. W. P.

Forwarded, for the information of the Accountant, North Western Provinces, by
Agra Collector's Office,
26 November 1851.

(signed) *M. R. Gubbins*,
Collector.

(No. 602.)

From *F. R. Neilson*, Esq., Executor, to *M. R. Gubbins*, Esq., Collector, Agra.

Sir,

Agra, 24 November 1851.

I HAVE the honour to acknowledge your letter of the 20th instant, annexing copy of a letter which you had received from the Accountant, North Western Provinces, regarding the claim made by Government upon the estate of the late Mr. Bell, and desiring information as to the probable time of adjustment.

Owing to delay in Calcutta caused by holidays, I have only to-day received probate from the Supreme Court, and I am unable at present to give you the information you desire; it is my intention to look into the claim made by Government, which I understand is for losses in cotton experiments which the deceased conducted on behalf of Government, and which he indiscreetly offered to take upon himself, although in no way liable. After an inspection of the accounts, it is probable that the circumstances may warrant my applying to Government to remit the whole or a portion of the claim: in the meantime it has been registered against the estate; the Government will of course merely rank as a general creditor, the estate not being solvent.

I have, &c.
(signed) *T. R. Neilson*, Executor.

(True copy.)
(signed) *M. R. Gubbins*, Collector.

(True copies.)
(signed) *R. Gordon*,
Uncovenanted Assistant to Accountant, N. W. P.

No orders at present necessary.

(True extracts.)
(signed) *W. Blackburn*, Reporter of Proceedings.

EXTRACT from Revenue Narrative, No. 2, dated 27 September 1854.

COTTON EXPERIMENT.

Para. 73. THE Board having been requested, with reference to former correspondence regarding the Government demand against the estate of the late Mr. H. H. Bell, to consider and report whether there was any adequate ground for directing an appearance in behalf of Government in the Sudder Court, in support of the application for a review of judgment in the case of *Choteh Loll v. F. R. Neilson*, executor of the deceased; they stated in reply their opinions that no good would result from the Government appearing in the case, as it was not a party to the original suit, and that the court would probably object to such interference if attempted, which was communicated to the Accountant for his information.

Collection, No. 72.
Demand of Government against the estate of the late Mr. H. H. Bell. Para. 42, Narr. No. 1 of 1854. Rev. Pro., March 1854, No. 331 to 337.

I.
Bengal and
North Western
Provinces.

EXTRACT from the Proceedings of the Honourable the Lieutenant-Governor of the North Western Provinces, in the Revenue Department; dated 27 March 1854.

No. 331.

(No. 7807 of 1853-54.)

From *C. Grant*, Esq., Accountant, North Western Provinces, to *W. Muir*, Esq., Secretary to the Government, North Western Provinces, Revenue Department, Agra.

Sir,

WITH reference to the 2d paragraph of your letter, No. 4697, dated 20th ultimo, I have the honour to transmit, for the information of the Honourable the Lieutenant-governor, copy of my letter to the address of the Collector of Agra, No. 7033, dated 22d ultimo, and of that officer's reply, dated 9th instant, together with the original documents which accompanied it, and to beg that the latter may be returned, when no longer required, for re-transmission to that officer.

I have, &c.
(signed) *C. Grant*,
Accountant, N. W. P.

Accountant's Office, N. W. P., Agra,
14 January 1854.

(Copies.)

No. 332.

(No. 7033 of 1853.)

From *C. Grant*, Esq., Accountant, North Western Provinces, to *M. R. Gubbins*, Esq., Collector of Agra.

Sir,

I BEG to transmit for your information copy of a letter addressed by the Secretary to the Sudder Board of Revenue to the Secretary to Government, No. 580, dated 29th ultimo, relative to the issue of the suit of *Mackillop, Stewart & Co. v. Mr. H. H. Bell's estate*, which has been forwarded to me by Government, and to request that you will be good enough to ascertain from the executor to the estate, and inform me when a dividend may be expected from the estate towards the liquidation of the Government demand in your inefficient balance, that I may intimate the same to the Honourable the Lieutenant-governor.

I have, &c.
(signed) *C. Grant*,
Accountant, N. W. P.

Accountant's Office, N. W. P., Agra,
22 December 1853.

(No. 843 of 1854.)

From *J. A. Brown*, Esq., Deputy Collector, Agra, to *C. Grant*, Esq., Accountant, North Western Provinces, Agra.

Sir,

WITH reference to your letter of the 22d ultimo, No. 7033, I have the honour to transmit copy of a letter from the attorneys of the executor of Mr. H. H. Bell, and enclosures in original, regarding the Government demand against the estate of the deceased, and request the favour of your returning the originals when done with.

I have, &c.
(signed) *T. A. Brown*,
Deputy Collector.

Agra Collector's Office,
9 January 1854.

On the 30th January last, the following letter was written to the Secretary Sudder Board of Revenue, North Western Provinces:

(No. 472 of 1854):

From *C. P. Carmichael*, Esq., Officiating Assistant Secretary to Government, North Western Provinces, to *G. J. Christian*, Esq., Secretary to the Sudder Board of Revenue, North Western Provinces:

Sir,

WITH reference to your letter, No. 580, dated the 29th November last, regarding the demand of Government against the estate of the late Mr. H. H. Bell, I am desired by the Honourable

Revenue Department.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 343

Honourable the Lieutenant-governor to forward the accompanying original letter, No. 7807, from the Accountant, N. W. P., dated the 14th instant, with its enclosures, in order that the Board may consider and report whether there is any adequate ground for directing an appearance on behalf of Government in the Sudder Court, in support of the application for review referred to in the letter from Messrs. Molloy & Mackintosh, to the address of Mr. Brown, Deputy Collector of Agra, of the 4th instant.

I.
Bengal and
North Western
Provinces.

2. You are requested to return the original enclosures with your reply.

I am, &c.
(signed) C. P. Carmichael,
Offg. Assist. Secy. to Govt. N. W. P.

Agra, 30 January 1854.

(No. 113 of 1854.)

From C. P. Carmichael, Esq., Officiating Secretary, Sudder Board of Revenue, North Western Provinces, Agra, to W. Muir, Esq., Secretary to the Government of the North Western Provinces.

No. 336.

Sir,

I AM desired by the Sudder Board of Revenue, N. W. P., to acknowledge the receipt of Government order, No. 472, dated the 30th January 1854, calling for their opinion, whether there was any adequate ground for directing an appearance on behalf of Government in the Sudder Court in support of the application for review of judgment in the case of Chotelol v. F. R. Neilson, executor of H. H. Bell, deceased, and in reply, to intimate that they are of opinion that no good will result from the Government appearing in the case, as it was not a party to the original suit, and the court will probably object to such interference, if attempted.

Revenue.
Present,
D. B. Morrieson,
Esquire, Senior
Member.

2. The Government vakeel, however, has been directed to attend at the hearing of the appeal to afford his aid, if required, to the executor's application, and to report the result.

I have, &c.
(signed) C. P. Carmichael,
Offg. Secretary.

Sudder Board of Revenue, N. W. P., Agra,
21 February 1854.

The following letter is written to the Accountant, North Western Provinces :

(No. 1471 of 1854.)

No. 337.

From C. P. Carmichael, Esq., Officiating Assistant Secretary to Government, North Western Provinces, to C. Grant, Esq., Accountant, North Western Provinces, Agra.

Sir,

I AM directed to acknowledge the receipt of your letter, No. 7807, dated the 14th January last, with its enclosures, relative to the demand of Government against the estate of the late Mr. H. H. Bell, and in reply, to forward for your information the accompanying copy of correspondence with the Secretary Sudder Board of Revenue, on the subject.*

Revenue Depart-
ment.

2. The original enclosures of your letter are returned, copies being kept for record.

I am, &c.
(signed) C. P. Carmichael,
Assist. Secy. to Govt. N. W. P.

Agra, 27 March 1854.

EXTRACT Agra Revenue Narrative (North Western Provinces), dated
12 May (No. 2.) 1847.

COTTON EXPERIMENTS.

WITH reference to paragraphs 1 to 5 of the Honourable Court's despatch of the 7th August 1846, respecting cotton, the growth of the Jullundar Doab, the Governor-General having requested to be informed whether Dr. Sill's services were available for instituting inquiries on the subject, his Honor stated that Dr. Sill was attached to the 8th native infantry, and that he was not aware of any impediment to his employment in the manner proposed; that officer was accordingly appointed to the duty by his Lordship.

Rev. Pro., October
1846, No. 58 to 60.
No. 120.

EXTRACT

* Letter to Secretary Sudder Board, dated 30th January 1854, No. 472.
Letter from Secretary Sudder Board, dated 20th February 1854, No. 113.

I.
Bengal and
North Western
Provinces.

EXTRACT from the Proceedings of the Honourable the Lieutenant-Governor of the North Western Provinces, in the Revenue Department; dated 7 October 1846.

No. 58.

(No. 146.)

From *F. Currie*, Esq., Secretary to Government of India with the Governor-General, to *J. Thornton*, Esq., Secretary to Government, North Western Provinces.

Home Department,
dated 7th August.

Sir,
I AM directed to forward, for the information of his Honor the Lieutenant-governor, the enclosed copy of paragraphs 1 to 5 of a despatch from the Honourable the Court of Directors; relative to cotton the growth of the Jullundur Dooab.

2. The Governor-general desires to be informed whether Dr. Sill's services be available for employment in the manner suggested by the Honourable Court; and if not, if his Honor can nominate an officer qualified for the duty.

I have, &c.
(signed) *F. Currie*,
Secy. to the Government of India
with the Governor-General.

Simla, 22 September 1846.

No. 59.

Revenue Department.

Copy paragraphs which will form a number in the next list of packet to the Governor-General of India in Council.

Revenue Letter to
Madras, 8th Oc-
tober 1845, No. 20.
Revenue Letter to
Madras, 26th No-
vember 1845,
No. 24.

Para. 1. You will have learnt from our despatches, noted in the margin, that we have directed that cotton, to the extent of 5,000 or 6,000 bales, should, if practicable, be procured and forwarded to us, in order correctly and finally to test the value of East India saw-ginned cotton in the European market. We think this opportunity a favourable one for procuring from the Jullundur Dooab a portion of the cotton required to be sent to England; and you will adopt early measures for obtaining and transmitting to Liverpool cotton to the extent of one thousand (1,000) bales from this district, if procurable.

2. It is desirable that inquiries should be instituted regarding the cotton which is said to be produced in large quantities and of a superior quality in that portion of the Jullundur Dooab, which has recently been annexed to our territories; and, for this purpose, we authorise you to depute a competent person into that country. Dr. Sill, of your establishment, who had temporary charge of the American cotton planters on the death of Captain Bayles, might probably be employed with advantage on this occasion.

3. A bale of each description of the cotton, weighing about 3 cwt., should be, as speedily as practicable, transmitted to England, and reports obtained on the mode of cultivation in general practice, the means employed in cleaning and packing the cotton, whether by machinery or otherwise, with any further information regarding the cost and produce per acre, the extent and annual quantity of the crop in the several districts, and the price at which the article is sold in the nearest market.

4. By the reports we receive from you, we shall be guided as to the expediency or otherwise of sending a supply of saw gins and implements of husbandry, for the purpose of improving either the system of cultivation or the mode of cleaning the cotton in the Jullundur Dooab.

5. In transmitting the above information, you will also inform us to what extent you can supply machinery, should any be required to meet the object we have in view by the institution of these preliminary inquiries.

(A true copy.)

London, 7 August 1846.

(signed) *J. D. Dickinson*,
Deputy Secretary.

(True copy.)

(signed) *F. Currie*,
Secretary to the Government of India with the Governor-General.

Reply.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 345

(No. 4328.)

From *J. Thornton*, Esq., Secretary to the Government, North Western Provinces, Agra, to *F. Currie*, Esq., Secretary to the Government of India with the Governor-General, Home Department.

J.
Bengal and
North Western
Provinces.

No. 60.

Sir,

IN reply to your letter of the 22d ultimo, No. 146, transmitting copy of paragraphs 1 to 5, of a despatch from the Honourable the Court of Directors, dated 7th August last, relative to the employment of Dr. Sill to report upon the cotton grown in the Julundur Doab, I am directed to observe, that he is at present attached to the 8th Regiment Native Infantry at Agra, and that the Honourable the Lieutenant-governor is not aware of any impediment to his being employed in the proposed manner. His Honor is unable to point out any other properly qualified person whose services are available for this duty.

Revenue Department.

Agra, 7 October 1846.

I have, &c.
(signed) *J. Thornton*,
Secy. to the Govt. N. W. P.

EXTRACT from the Proceedings of the Honourable the Lieutenant-Governor of the North Western Provinces in the Revenue Department, dated 16 October 1846.*

(No. 160.)

From *F. Currie*, Esq., Secretary to the Government of India with the Governor-General, to *J. Thornton*, Esq., Secretary to the Government of the North Western Provinces.

No. 120.

Sir,

WITH reference to my letter, dated the 22d September last, No. 146, I have the honour to inform you, that the Right honourable the Governor-general has been pleased to appoint Surgeon Henry Sill to the duty of examining and reporting on the cotton growing in the Julundur Doab.

Home Department.

Simla, 7 October 1846.

I have, &c.
(signed) *F. Currie*,
Secy. to the Government of India
with the Governor-General.

EXTRACT from the Proceedings of the Honourable the Lieutenant-Governor of the North Western Provinces, in the Revenue Department, dated 9 December 1846.

(No. 191 of 1846.)

From *F. Currie*, Esq., Secretary to the Government of India with the Governor-General, to *J. Thornton*, Esq., Secretary to Government, North Western Provinces, Agra.

No. 30.

Sir,

I AM directed to forward for the information of his Honor the Lieutenant-Governor, the enclosed copy of a letter, dated the 14th instant, from Dr. Sill, and to intimate the Governor-general's wish that one of the American saw gins, accompanied by a native acquainted with its working, may if not inconvenient, be transferred from Agra into the Julundur Doab, there to be at Dr. Sill's disposal.

Home Department.

Camp, Rajpoora,
19 November 1846.

I have, &c.
(signed) *F. Currie*,
Secretary to the Government of India
with the Governor-General.

I.
Bengal and
North Western
Provinces.

No. 31.

From Surgeon *Henry Sill* to *F. Currie, Esq.*, the Secretary to the Government of India with the Governor-General.

Sir,

I HAVE the honour to request you will do me the favour to solicit the Right honourable the Governor-general to sanction the transfer of one of the American saw-gins from Agra to the Jullundur Doab. If one of the 60 saw gins could be made available, I should prefer it to one of 20; and it might in the first place be addressed to the care of the Deputy Commissary of Ordnance at Phillour, until in consultation with Mr. Vansittart I am enabled to decide in what locality it may with the greatest advantage be employed.

It is obvious, that the cost of transmission would be much less than the cost of conveyance to Agra or Bombay of the quantity of seed cotton required for even four bales of 300 lbs., and to one of these places the kupass must necessarily be sent, as it is the object of the Court of Directors to test the value of saw-ginned cotton.

Mr. Vansittart requests me to add, that he coincides with me in the proposal I have submitted, and irrespective of the present inquiry under the orders of the Court of Directors, is anxious to have one of the gins in the Doab, with a view to inducing the natives generally to devote more attention to the mode of cleaning their cotton.

Sultanpoor, Jullundur Doab,
14 November 1846.

I have, &c.
(signed) *Henry Sill.*

P. S.—I would suggest that a native who has been accustomed to the working of the gins should be directed to accompany it.

(True copy.)

(signed) *W. Edwards*, Under Secy. to the Govt of India
with the Governor-General.

The following letter is written :

(No. 5181.)

No. 32.

From *A. Shakespear, Esq.* Assistant to the Secretary to the Government, North Western Provinces, Agra, to *C. Allen, Esq.*, Officiating Accountant, North Western Provinces, Agra.

Sir,

Revenue Department.

I AM directed by the Honourable the Lieutenant-governor to transmit copy of a letter from the Secretary to the Government of India with the Governor-general, dated 19th ultimo, No. 191, with its enclosure, and to request you will forward one of the American saw gins to the Julundur Doab as therein desired.

Agra, 9 December 1846.

I have, &c.
(signed) *A. Shakespear,*
Assistant to the Secy. to the Govt. N. W. P.

(True extracts.)

(signed) *W. Blackburn*, Reporter of Proceedings.

(No. 11.)

Home Department, Simla, 14 August 1847.

To the Honourable the Court of Directors of the Honourable East India Company.

Honourable Sirs,

WITH reference to your Honourable Court's despatch in the Revenue Department, No. 9, dated 12th August 1846, I have the honour to submit a report* from Mr. J. Lawrence, with its enclosures, respecting the cultivation of cotton in the Julundur Doab.

2. From a perusal of these papers, your Honourable Court will be satisfied that the Doab offers no peculiar advantages for cotton cultivation over those possessed by several districts in the North Western Provinces; and though cotton of a good quality is grown in some parts of the Doab, and its cultivation could no doubt be extended, yet as nearly the whole country is represented to

* From Commissioner and Superintendent Trans-Sutlej States, No. 49, dated 19th March 1847; from Commissioner and Superintendent Trans-Sutlej States, No. 71, dated 26th April 1847.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 347

I.
Bengal and
North Western
Provinces

to be covered already with fine crops of wheat, barley and sugar-cane, it does not seem advisable for the Government to exert any interference, or go to any expense to encourage its cultivation, for the self interest of the agriculturists will induce them to devote greater capital and labour to that crop, whenever it offers promises of better remuneration.

3. Under these circumstances, as the purposes of Dr. Sill's deputation have been fulfilled, I have placed his services again at the disposal of the Commander-in-Chief.

4. I regret to find that the local officers have not fully acted up to the wishes of your Honourable Court, in sending 100 bales for examination to Liverpool, but should any desire be now expressed to that effect, after inspection of the accompanying samples, the Commissioner will have no difficulty in furnishing that supply.

Simla, 14 August 1847.

I have, &c.
(signed) *Hardinge.*

(No. 49 of 1847.)

From *John Lawrence*, Esq., Commissioner and Superintendent, Trans-Sutlej States, to *H. M. Elliot*, Esq., Officiating Secretary to the Government of India with the Governor-General.

Sir,

WITH reference to Mr. Secretary Currie's letter, No. 147, dated 22d September last, to the agent, Governor-general, North Western frontier, forwarding an extract of a despatch from the Honourable the Court of Directors regarding the cultivation of cotton in the Julundur Doab, I have the honour to submit correspondence, as per margin,* being copies of the reports of the officers in charge of the two districts of Julundur and Hoshiarpore, into which the Doab is divided, and of Dr. Sill, who was deputed by Government to make especial inquiries.

2. Since my return from Lahore, in December last, I have been traversing the country in every direction up to this period, and, among other public pursuits, have been making inquiries and collecting data in respect to cotton cultivation. I was unfortunately too late to see the crop of last season on the ground, but I have ascertained enough to satisfy me that the opinion I expressed in my letter, No. 690, dated 28th November last, from Lahore, is substantially correct, and that this Doab has little pretensions to be called a cotton country. As my views differ in several essential points with those entertained by Mr. Vansittart and Dr. Sill, it is necessary that I lay before Government the grounds on which I have formed my conclusions. ●

3. I propose to premise my remarks with a short analysis of the reports of these gentlemen.

4. Mr. Vansittart states that cotton is sown in March, except on the banks of rivers, where it is sown in July; and that where the crop is not irrigated the return is poor. I coincide in these opinions generally, but think that cotton is sown both in March and towards the end of June, after the first fall of rain, and that there is little or no cotton grown on the banks of either the Beas or Sutlej. I am also of opinion, that the great mass of cotton grown in the Doab is produced on unirrigated lands, for the reasons which I will hereafter assign.

5. The cleaning of cotton is certainly a laborious and expensive process; it usually absorbs the whole value of the seed. In Pulwul it was the custom for the cleaner to take the seed as his remuneration, the owner receiving the cotton. I understand that Mr. Vansittart has made the same arrangement for cleaning the cotton he has collected for transmission to England. In all the estimates† I have received the cleaning expense forms a large item; any improvement which can therefore be effected by the introduction of machinery will be a universal benefit.

6. I coincide

* From Deputy Commissioner, Julundur, No. 130, dated 26th December 1846; from Dr. Sill, dated 27th January 1847; from Deputy Commissioner, Hoshiarpore, No. 33, dated 9th February 1847.

						Rs.	a.	p.
† Delhi	-	-	-	-	-	10	12	9
						8	1	7
Pulwul	-	-	-	-	-	4	3	2
Rahoon	-	-	-	-	-	4	13	10

1.
Bengal and
North Western
Provinces.

6. I coincide with Mr. Vansittart, that the best cotton grows in the highlands where water is at a considerable depth, which, however, is opposed to Dr. Sill's opinion. I do not think that all cotton requires irrigation; that grown in some places and irrigated, may yield a larger return; but I have ascertained, beyond question, that the greater proportion of cotton in the Doab is not irrigated, and that all the finest kinds are grown where irrigation is impracticable.

7. In the Julundur district, which embraces the southern portion of the Doab, water is generally near the surface; in no places is it 40 feet distant, in the majority from 10 to 15. This is clearly shown from the fact that the Persian wheel is the mode used for raising water, which it is obvious would be impossible if it was very distant from the surface. I admit that in some places the people in Julundur irrigate their cotton, and have shown that they have the facilities for so doing; but I repeat that the practice is not generally adopted. Mr. Vansittart is correct when he asserts that sugar-cane pays little better than cotton; his estimate of the return from the former crop is also just, but I do not think that any of the cotton in his district is superior to that imported; it is vastly inferior to that grown in the skirts of the hills.

8. This officer* estimates that an acre will yield on an average 692 lbs.,† which he values at a fraction less than 25 rupees. The estimate of produce is moderate, that of its value too high. I would estimate its retail price at 21 rupees, but it must be recollected that the cultivator would sell at 30 per cent. lower at the time of harvest, so that he would probably receive not more than 14 or 15 rupees for his acre of cotton, out of which he has to pay all the expenses of cultivation. No wonder, then, by universal consent among the agriculturists, it is admitted that cotton cultivation does not pay.

9. Mr. Vansittart‡ estimates the net profit of an acre at but three rupees on irrigated land, and less than this sum on unirrigated soils. He considers that cotton yields a rent of Rs. 7. 11. an acre;§ my inquiries, which Mr. Cust confirms, lead me to conclude that four rupees is about the average of rent on cotton land. (Rent is very high in the Doab, but this arises from the density of the population, not from the superior fertility of the soil.) Up to the period of the cession, the proprietors of the soil have literally received no rent at all, the revenue demands have swallowed up all that could possibly be squeezed out of the people. In jagheer villages the jagheerdar's demands had exceeded rather than fallen short of one-half the gross produce, a demand unknown in equally favoured districts, where the proportion of population to area is less excessive. The rent of cotton land is always paid in money, and Mr. Vansittart estimates it at one-third the produce, other products paying one-half. Is it not unaccountable, that if this is a fine cotton country, that the agriculturists consider it will not pay with an advantage of one-sixth in the rent of land, and that the Julundur district, comprising half the Doab, is estimated to grow but 8,000 acres.

10. It is a mistake|| to suppose that the cotton of the south is all grown on canal lands. In Hansi, Kurkondah, Rotuck and Delhi this is generally the case, but in Pulwul, Horul, Hutheen and Kosee it is all grown on unirrigated land; nor, as I have already stated, is all the Julundur cotton, or even a large proportion, irrigated; the fact, therefore, which Mr. Vansittart admits, that capital is employed on sugar-cane, and not on cotton, must arise simply from its cultivation not paying, and not from the expense of irrigation.

11. It is incredible,¶ in my judgment, that cotton on the Chenab yields a rent of 18 rupees per acre; if this was the case, that tract would be the finest country in India for cotton, whereas it is acknowledged by all the merchants, that the Delhi cotton finds its way into the Punjab.

12. Mr. Vansittart has been authorised to try experiments in cotton cultivation on the lands of a number of government wells near the town of Julundur. We shall have the results by next cold season, but even if his experiments succeed, which I doubt, I do not consider that they will satisfactorily show the results of an extended cultivation in the Doab. The land he is cultivating being near a large city, will be cheaply and abundantly manured, an advantage which extensive tracts of cultivation cannot obtain.

13. Dr. Sill** considers the soil of the Doab as eminently adapted to the cultivation of cotton; I differ from that gentleman. The soil here is light and sandy, which it is notorious is unfitted to the growth of cotton. The strong black clay of Bundecund, the hard, firm soil of Pulwul, Kurkondah and Kosee is infinitely more suited for this produce. The fact that kunkur (which I believe is nothing more than the concrete of lime formed from water lying on it, and is found in all parts of the Upper Provinces, whether the soil is adapted for cotton or otherwise), prevails in the soil of the Doab, proves nothing; it abounds in the
Upper

* Vide para. 9 of his Report.

† Uncleaned.

‡ Vide statement to para. 5 of his Report.

§ Vide para. 10 of his Report.

|| Vide paras. 11, 12 & 16 of Mr. Vansittart's Report.

¶ Para. 13 of Mr. Vansittart's Report.

** Vide Dr. Sill's remarks on the nature of the soil.

Upper Doab, between the Ganges and Jumna, which is by no means famous for cotton cultivation. I have always observed that the soil which produces gram in abundance is suited to cotton, and is of a fertile description. There is hardly any gram in the Doab.

14. In some localities water, I admit, is found close to the surface, but these are places which either do not grow cotton, or where its produce is inferior. The best and finest kinds, as I have already observed, are grown where irrigation is impracticable. The traces of the canal alluded to by Dr. Sill are in existence, but it does not lie in that part of the Doab which yields any considerable quantity of cotton. It appears to me that a canal could not be dug so as to reach the uplands, where, of course, water is most required; certainly not, except at a most enormous expense both in the original outlay, and in keeping open its mouth, owing to the lightness of the soil, and the varying character of the beds of the Beas and Sutlej.

15. I concur in Dr. Sill's remarks on the mode of cultivation, in which there is nothing peculiar. The fact that the soil is badly manured is undoubted, and arises from local peculiarities over which we have no control, and which would alone prevent the cultivation of cotton being much improved. This arises from the difficulty of procuring manure. The people are fully alive to its value, and are provident in saving it up; but they have but few cattle, owing to the absence of grazing lands, and from the excessive scarcity of wood (which I have never found cheaper than two maunds for the rupee), much of what would otherwise be used on the land is converted into fuel by being baked in the sun.

16. No doubt the picking and cleaning of cotton might be vastly improved, but this remark is not peculiar to the Julundur, but applies with equal force to all places where cotton is grown. I submit, with this report, three specimens of cotton, which I purchased in the town of Julundur, which it strikes me are very fairly cleaned. The introduction of English gins throughout India would probably tend more to raise the value of its cotton than any plan that could be devised.

17. As to the quantity of produce, I think Dr. Sill's estimate of 207 lbs. for an acre of cotton is fair enough, but I do not think that there is so much difference between irrigated and unirrigated land, though there is probably some. The zemindars, no doubt, are afraid to answer truly such inquiries, experience having taught them to dread all investigation into the profits of agriculture, and if it is the case more or less in our old provinces, must be much more so in a newly acquired territory. But as the people freely tell what is the produce of sugar-cane, wheat and barley, there can be no especial reason to conceal that of cotton. I have been repeatedly assured by the cultivators that cotton is not a productive crop, that sugar-cane is eminently so, and that the former is grown solely for consumption, not for sale. I have seen the whole of the country between Byrowal and Umritsur, and doubt the correctness of the estimated produce in those parts. I have not seen Deena-Nugger, which is some 20 miles beyond the Beas, a little way after it leaves the hills, and about opposite Noushera, beyond Mokerian, but this I feel assured of, that the Delhi cotton crosses the Beas, which certainly is inexplicable, if Deena-Nuggur and Umritsur is so fine a cotton country.

18. There is little worthy of remark regarding the quality of the cotton,* except that there is a very considerable difference in the different kinds grown in the Doab. The neighbourhood of Ragoon is not famous for cotton, but it is at that place it is manufactured to some extent into cloth. The best cotton grows in Bhit Manswal, on the top of the lower range of hills, where there are no wells, and where the people of six and eight villages have a single well on the lower ground to drink from. The next best is the district of Ghur Shunkur, which embraces all the villages under the hills from 15 miles east of Hoshiarpore to within a couple of miles of the Sutlej; this is called the "Kundi" cotton, that term being the designation by which the land under the hills is known. Here water varies from 50 to 100 feet deep, and where not an acre of irrigated land is heard of. The country round Hoshiarpore, for 15 miles in every direction except the north (where it extends but five miles), ranks in the third class; here water is very near the surface, and the soil is cool and moist. This district is termed "Sirwal," and the cotton is sown towards the end of March. The midland tracts termed "Dhak," from the tree of that name which grows in its waste lands, holds the fourth place; it embraces part of Ragoon and greater portion of Nowashuhur, Phillour, Dhurowlee, &c. The tracts on the banks of the rivers are termed "Bheet," or lowland, and are quite unsuited to cotton. The lands about Julundur, Nukodie and Junsher, forming the southern portion of the district adjoining the Beas, are termed "Dhonah," from the Persian wheel used for drawing up water, and are the places from whence the irrigated cotton chiefly comes, and which is considered vastly inferior to the three first kinds above described. It is generally calculated that the uncleaned cotton yields about one-third cotton to two-thirds seed. The best kinds probably yield that proportion, the inferior kinds from 2 to 4 per cent. less. But on this point I speak with hesitation, for I do not place much confidence on the opinions I have gathered, for unless people are very observant and accurate, they are liable unwittingly to mislead.

19. Dr.

* Quality of wool—Vide Dr. Sill's Report, chap. 5.

I.
Bengal and
North Western
Provinces.

19. Dr. Sill concludes his report by admitting that the Doab is not a cotton-growing country, but that from the nature of the soil and the capabilities of irrigation, it would, under proper treatment, exceed all other parts of the country in the quantity, quality, and cost of production. I confess that the opinions I have arrived at are very different. The quality of that grown in peculiar localities I fully admit. That produced in the greater part of the Doab I consider is in no way superior to cotton grown in other parts of the Upper Provinces. I have also, I think, satisfactorily shown that the best cotton is grown on lands where irrigation is impracticable. I have given reasons why it would be difficult to increase the productive powers of the land by manuring, if, indeed, the doing so would not injure the quality of the crop. I have explained my reasons for not thinking the soil of the Doab peculiarly adapted to cotton cultivation. Throughout the Doab the richest and most favourite crops are sugar-cane; every man who has the means cultivates a little; wheat and barley are the staple produce for the spring; rice in the swampy low lands, and jowar in the up-lands, for the winter crop. The ordinary proportion of cotton is 2-5ths of an acre to a plough, by which 10 acres are cultivated per annum. "We grow cotton for the house, not for sale," is the answer I received to all my inquiries. The women and children weed, pick and spin the cotton, and the village weavers make the cloth, which the poor wear; the expense, therefore, of the cultivation of a small quantity is not felt, and saves the outlay of hard cash. How different is it in Pulwul and other districts on the Delhi side. Here you are told, "let us only have early rain and we shall have a good cotton crop, which will of itself pay the revenue."

20. If I consider the soil of the Doab in no way favourable for cotton cultivation, I think the climate still less so. Here the cold sets in early, and the frost is severe. A single night of frost ruins the cotton crop, which it withers and destroys, the pods dropping from the stalks, and the leaves shrivelling up as if scorched with fire. The mass of the cotton is unirrigated, if, therefore, the rains set in late, the cotton crop must fail, for the cold weather will arrive before the cotton crop is gathered.

21. If the Julundur Doab has great facilities as a cotton country, how is it that such vast quantities are imported from a distance? Messrs. Vansittart and Cust both allow this fact. The merchants of Julundur assure me that they import 50,000 maunds; those of Hoshyarpore 10,000. There is not a petty town in the province that does not import cotton; it is more easily procurable than native produce; the roads are covered with waggons and camels laden with cotton. Last night I met a string of camels as I rode into Hoshyarpore, laden with cotton from Jugadri, on the Jumna, which had been a month on the road. From Buwan in Rohtuck to the town of Julundur must be upwards of 200 miles, over sandy roads and deep nullahs, and the route lies through the independent states, where, until lately, heavy and vexatious duties were levied. Is it conceivable that cumbrous waggons would plough their weary way through this distance, if the Doab had facilities for cotton cultivation? The imports to Julundur do not, however, stop there, much of them pass on to Hoshyarpore, find their way to Mokerian, penetrate the Punjab, and even obtain a market at Haugrah, through a mountainous tract of 50 miles, where goods can only be transported on mules, bullocks, and men's shoulders.

22. It is difficult to estimate the quantity grown in the Doab. Mr. Vansittart thinks that his district, which is one-half the country, grows 8,000 acres, in Hoshyarpore the other half, which is decidedly the cotton country, the estimate is 20,000 acres. I do not doubt that there are 30,000 acres grown, there may be more; the quantity is quite problematical, for there are no data on which to rely. When the country is surveyed and measured, the exact quantity can easily be ascertained.

23. A great difficulty to extending the cultivation of cotton is the tenures of land, and the fact that the country is fully cultivated and densely peopled. I may safely assert, that nearly all the arable land is under cultivation; Government could not procure land in any extent for experiments, and the people would not willingly grow cotton for it. I know of no act so unpopular as the unavoidable appropriation of lands required for cantonments; no recompense seems to satisfy the people; they say, "we don't want its price, what are we to do without land." In fact, as in Ireland, a man must cultivate land or starve.

24. In conclusion, I have only to state, that I consider it a fallacy that cotton is extensively grown in the Doab, and I further think, that any attempt to force its cultivation will prove a failure, and involve Government in loss of money and in much unpopularity. To this report I beg to add notes of the information I have collected in my investigations, and an estimate of the produce of an acre of cotton in Pulwul, Delhi, and in this territory.

I have, &c.

(signed) John Lawrence,
Commissioner and Superintendent.

Commissioner's Office,
Trans-Sutlej States, Camp, Hoshyarpore,
19 March 1847.

A P P E N D I X.

I.
Bengal and
North Western
Provinces.

NOTES OF INFORMATION collected by the Commissioner in his Investigations on the subject of the Cotton Produce of the Julundur Doab.

THE TOWN of this name contains nearly 40,000 souls, and is a place of considerable trade. It is the civil station of the southern division of the Doab. I was there in December last, just after the cotton season was over. The merchants told me that full 50,000 maunds of cotton were annually imported from Buwani, Kurkonda and Hansie; that the produce of the country was limited, but that the cotton grown under the first range of hills was of the best quality; that imported the next, and that of the plains the least good; they assured me that the Delhie cotton spread over the Doab, crossed into the Punjab, and penetrated into the Kangra Hills. Julundur.

During my travels in the southern portion of the Doab, I observed more fields of cotton about Nicoda, Phillour, Jumsheir than in other places, but nowhere to any considerable extent. Along the roads I met strings of carts all laden with cotton from the Delhie districts.

The cotton grown round and about Julundur, and the other parts of the southern portion of the Doab, is chiefly unirrigated, though water is close to the surface and wells abundant. The produce is all considered third-rate by the people.

This division of the Julundur district lies along the left bank of the Beas. The land is low, and usually flooded in the autumn. The spring crops are abundant; those of the winter scanty. At the town of Tanda on the 19th February, I saw two carts laden with cotton imported from Rohtuck. The carter said that he had been 30 days on the road, that he had paid Rs. 5. 4. on each cart as transit duty in the Seikh States; that he had purchased at Rs. 6. 4. per maund, and expected to sell at 9 rupees, and that he would take back hemp. This venture would give a profit of about 15 per cent.: *vide* account in the margin.* Urmur Tanda,
116 Government
villages paying
1,19,556 rupees,
besides jageer
lands.

The agriculturists of the Tanda district, say that they grow little cotton, though the land is fertile, owing to the autumnal inundation; they estimate that about two-fifths of an acre may be grown for each plough; that at harvest 34 lbs. of uncleaned cotton with the seed, sells for a rupee, and that this quantity gives the following return:—

	<i>Rs. a. p.</i>
Clean cotton, 7 lbs. - - - - - -	- 11 -
Seed - - 27 lbs. - - - - -	- 7 -
<i>Rs.</i>	1 2 -

They further informed me that the Tanda cotton was inferior to that of Delhie or what is grown under the skirts of the hills, in the following proportions:—80 lbs. of clean Tanda cotton, fetching 7½ rupees, the same quantity of Delhie produce sells for 8½ rupees, and of Rahoon cotton for 8¾ rupees; they also told me that sugar-cane was the most paying crop, then wheat, and that cotton did not pay at all; and was only grown for the personal consumption of the cultivator; I saw few traces of cotton cultivation, either here or anywhere along the banks of the Beas, from Noushera to Sultanpore, a distance of 40 miles at the least.

Rahoon is the chief town of the district of the same name. It must formerly have been a place of considerable importance judging from the buildings around and in it. The population Rahoon.

* Maunds-70 = 5,600 lbs.	<i>Rs. a. p.</i>
<i>Mds.</i> 70 x 6½ - - - - - - =	437 - -
Transit duty - - - - - - =	10 8 -
Cart-hire, 30 days - - - - - - =	60 - -
	507 8 -
Add 10 per cent. for waste, &c. - - - - - =	50 8 -
	558 - -
Profit - - - - - - =	72 - -
	70 x 9 = 630 - -

I.
Bengal and
North Western
Provinces.

population now cannot fall short of 9,000 or 10,000 souls, there being 3,600 houses, nearly all built of brick, of which 1,100 are shops.

I visited the place on the 12th of March, when a number of the principal people waited on me. The merchants say that there is still a good deal of trade. They import rice, drugs and iron from the Hills in considerable quantities; salt from the Punjab, English cottons, soda and raw cotton from our Provinces. The exports are fine cotton goods to Meoltan, the Punjab and the Hills, and great quantities of sugar of all kinds.

The merchants and agriculturists assure me that little cotton is produced round Rahoön, the land being too low and moist for its cultivation; that there is more cotton grown near Nowashehur, and in the skirts of the hills; the latter is of superior quality, and sells from 8 lbs. to 10 lbs. for the rupee. Delhie cotton fetches from 6 to 7 per cent. less. The price of that grown round Rahoön is a shade cheaper than the Delhie cotton; it is difficult however to say what price it bears, for hardly any is sold, all is worked up into cloth by the people. It is estimated that perhaps 20,000 maunds, 16,00,000 lbs. is grown in the Doab. Everything however depends on having early rains; if sown late, the cold weather sets in before it can be gathered, when the cold shrivels up the plant, and destroys it; soil slightly sandy yields better crops than hard and strong land. Irrigated land yields a greater produce; unirrigated lands under the hills, cotton of a finer quality. The best land irrigated will yield 20 rupees' worth of cotton and seed; good soil not irrigated 116 rupees per acre; but the Rahoön land will not give such a crop. The rent of cotton land is but Rs. 3. 12., that of sugar-cane, 12 rupees per acre; garden-stuff, tobacco, poppy yield a higher rent.

Such is the information I collected on the spot; and in my rides I certainly did not see the traces of much cotton cultivation.

Hoshyarpore.

This is the chief town and revenue division of the district of the same name. It pays a revenue of 2,09,000 rupees, and has a large proportion of jagheer besides. The chief merchants assured me that their neighbourhood was a poor cotton country; that its whole produce did not suffice for the home consumption, and that full 10,000 maunds were annually imported into the town from Bewanie and Rohtuck; and that the importation was on the increase, in consequence of the abolition of transit duties in the Sekh States (they assured me that no cotton came from the Punjab, but that the Delhie cotton went there, as well as into the hills round Kangrah.) The agriculturists asserted that the cultivation of cotton did not pay, but that what was grown in the neighbourhood of the lower range of hills was, in every respect superior to any other cotton. Delhie cleaned cotton usually sells at 10 lbs. the rupee; that from near the hills at only 7 lbs.

In riding over the country, I saw a few fields here and there where cotton had been grown, but to all my inquiries I received the same answer, that there was little grown, and solely for private consumption. In one or two places I was told that the climate was too cold for it. At Hoshyarpore I saw not less than 20 carts arrive laden with Delhie cotton, to the extent of between 600 and 700 maunds, during the few days I remained there. Cotton is sown in this district in March, as well as July, in unirrigated land, the soil being sufficiently moist for the purpose. Water varies only from 10 to 15 feet from the surface. This cotton thus early sown, is gathered in October, November and December; that sown in July would be a month or six weeks later. This district is called Seerwal, from the moistness of the soil; it is entirely flooded in the rains from the mountain streams, and grows magnificent crops of wheat, barley and sugar-cane, without any well irrigation.

The tehseeldar gave me the following return of the comparative profit derived from the cultivation of sugar-cane and cotton:—

Sugar-cane, per acre :		
Produce	- - - - -	Rs. 90
Expense for cultivation	- - - - -	Rs. 13
Rent	- - - - -	20
		33
Profit	- - - - -	Rs. 57

Cotton, per acre :		
Produce	- - - - -	Rs. 16
Expense	- - - - -	Rs. 12
Rent	- - - - -	4
		16
Profit	- - - - -	Nothing.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 353

Mokerian is that part of the Hooshyarpore district bounded by the lower range of hills on the north, and by the Beas on the south and west. The land in the skirts of the hills produces fine cotton, but the whole quantity does not exceed 1,500 or 1,600 acres, of which one-third is said to be irrigated, and two-thirds unirrigated, but I doubt very much the proportions. The people say its cultivation does not pay. They estimate the yield of an acre at Rs. 12. 8., and the expense at about 10 rupees. The average cultivation is said to be three-fourths of an acre to each plough. Cotton is imported in considerable quantity, and none of that grown is exported.

I.
Bengal and
North Western
Provinces.
Mokerian.

Mokerian pays a Government revenue of little short of two lacs, and has some but not much jageer.

Juswan Doon is said to yield about 4,000 acres of cotton, all of it unirrigated. This tract pays a revenue of 90,000 rupees, and has perhaps half that sum in jageer. The Doon lies between two ranges of low hills, and, with the table-land on each side, comprises an immense extent of country, not less than 60 miles long and 20 broad. The soil is generally poor and broken, being intersected in all directions by ravines and mountain torrents. On the sides of the hills, as well as on the table-land, there are no wells; all the water is brought from below, and, even there, seven or eight villages have but a single well. The cotton produced in some 30 villages on the top of that portion of the range above Ghur Shurker, which is called Bheit Manswal, is said to produce the finest cotton in the Doab. I do not believe there is a well in the whole of this range.

Juswan Doon.

Hajeepore is a district containing 220 villages belonging to Government and Jageerdars, and is situated on the western extremity of the Doon or valley north of the lower range of hills. The soil is about average quality, firm and dry, being of that description said to be suited to cotton. In a conversation with a number of the proprietors, merchants, and cultivators, I ascertained the following points:—

Hajeepore:
Government Revenue
Rs. 71,945.

The cotton grown about Hajipore is particularly fine (*vide* specimen, marked 1). Cleaned cotton of this quality usually sells at 7 lbs. for the rupee, while that imported is only valued at 10 lbs. for the rupee. Not more than 100 maunds, 8,000 lbs. weight, however, is calculated to be grown in an abundant year, and all on unirrigated land. This year the cotton crop was a failure, which was always, more or less, the case when the autumn rains did not set in early. It is calculated that about two-fifths of an acre of cotton is cultivated to each plough, and that all that is grown is consumed in the country, and much imported besides. The cotton cultivation is pronounced to be expensive, uncertain, and not paying.

I visited this district in February, too late of course to see the cotton crops, but the stalks of the plant were visible. I should judge, from what I saw and heard, that the cotton crop cannot exceed two or three per cent. of the whole cultivation. Water is from 50 to 80 feet from the surface in this tract.

This is a very large subdivision of the Hooshyarpore district. It pays Government a revenue of 179,000 rupees, and perhaps half as much more is in jageer, and contains the whole of the tract under the hills, full 20 miles long and 10 broad, which is always named as producing the finest cotton. I visited it in March, too late to see anything but the marks of cotton cultivation. The agriculturists say, that in the vicinity of the hills, where water is distant from the surface and the soil firm, a good deal of cotton is grown, all of fine quality; but that when water is near the surface the produce is inferior, and the quantity limited. All the cotton is grown without irrigation; and, near the hills, an acre of good cotton is estimated to be worth from 16 to 20 rupees. At a distance from 12 to 15 miles, they estimate that the native cotton is superior to that imported, in the proportion of 5 to 4½, but that a good deal was imported, for that the cultivation was not profitable. In a village under the hills, near to the town of Ghurshunker, which has just been measured, I find 12 acres of cotton out of 454 of cultivation, or 2½ per cent.; six to eight per cent. I would estimate as the average amount of cultivation throughout the district. Water varies from 40 to 140 feet deep in this tract.

Gurshunker.

(signed) John Lawrence,
Commissioner and Superintendent.

STATEMENT showing the Cost of an ACRE of COTTON CULTIVATION in the *Delhie* and *Julundhur* Districts.

1. DISTRICTS	2. DESCRIPTION of SOIL.	3. 4. 5. 6. 7. 8. 9. 10. 11. EXPENSES OF ONE ACRE OF COTTON CULTIVATION.									12. 13. 14. QUANTITY PRODUCED.			15. 16. 17. VALUE OF PRODUCE.			18. NET PROFIT.	19. REMARKS
		Land Rent.	Ploughing.	Manure.	Seed.	Weeding.	Water.	Collecting.	Cleaning.	TOTAL.	Cotton.	Seed.	TOTAL.	Cotton.	Seed.	TOTAL.	Rs. a. p.	
		<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Lbs.</i>	<i>Lbs.</i>	<i>Lbs.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	
Near Delhie	Best soil, irrigated from canals.	6 6 4	4 - -	6 6 6	- 4 10 for 19 lbs.	3 13 2	1 - -	7 0 4	10 12 9	40 5 10	384	1,152	1,536	28 12 9	14 6 5	43 3 2	2 13 4	(a)
	Second rate, irrigated from canals.	4 12 9	3 3 2	3 3 2	- 4 10	3 12 2	1 - -	5 1 7	7 3 2	28 9 10	256	768	1,024	19 3 2	9 9 7	28 12 9	- 2 11	
	First kind, unirrigated soil.	4 12 9	4 - -	2 2 2	- 4 10	3 13 2	- -	5 11 10	8 1 7	28 14 4	288	864	1,152	21 9 6	10 12 9	32 6 3	3 7 4	
	Second rate, unirrigated soil.	3 9 7	3 3 2	1 9 7	- 4 10	3 13 2	- -	4 7 4	6 4 9	23 4 5	224	672	896	10 12 9	8 6 4	25 3 1	1 14 8	
Pulwul, Southern Division Delhie Territory.	First rate, unirrigated land.	4 12 9	5 9 7	3 3 2	- 9 7 for 38 lbs.	3 9 7	- -	3 3 2	4 3 2	25 3 -	342	682	1,024	23 7 6	6 13 2	30 4 8	5 1 8	(b)
	Second rate, unirrigated land.	3 9 7	4 6 5	2 9 5	- 9 7	3 - -	- -	2 6 5	3 3 2	19 9 7	256	512	768	17 9 7	5 2 -	22 11 7	3 2 -	
Rahoon, Zillah Julundhur.	Best unirrigated land.	5 3 4	2 9 -	1 4 -	- 5 1	2 9 -	- -	3 13 6	4 12 10	20 8 9	154	460	614	19 3 2	4 12 10	24 - -	3 7 3	(c)
	Second rate, unirrigated land.	3 3 10	2 9 -	- 10 3	- 5 1	2 9 -	- -	2 9 2	3 3 2	15 1 6	102	306	408	12 12 10	3 3 10	16 - 8	- 15 2	

(a) The expenses appear great; but as the people cultivate their own land, the expenses shown in Columns 4. 7. 9. are hardly felt, as the family perform it themselves.

(b) The remarks on the expenses of cultivation made on the return for Delhie is equally applicable here. The expense of seed is very much greater in this return; but the tehseldar remarks that for the seed he took its price at the time of sowing, and for the value of produce its price at harvest, and that the difference is 36 per cent. The soil of Pulwul is superior to that of Delhie, but I do not understand why double the quantity of seed is used. Formerly it was the practice in Pulwul that the cleaner took the seed as his wages, and the cultivator the cotton. Seed has now risen in price,

and cotton fallen; a fixed sum, therefore, is now paid for the operation. Clean cotton varies from 20 to 12 lbs. for the rupee.

(c) Average price of uncleaned cotton, 32 lbs for the rupee. The cultivators, when selling it, usually dispose of it uncleaned, but when cleaning it, give the seed to the cleaner as the wages of labour. The soil here being very light and easily ploughed, accounts for the moderate expense of ploughing. It is usual about Rahoon to grow cotton in succession to a wheat crop.

(signed) J. Lawrence,
Commissioner and Superintendent.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 355

(No. 130.)

From *H. Vansittart*, Esq., Deputy Commissioner, Julundur, to *John Lawrence*, Esq.,
Commissioner and Superintendent, Julundur Doab.

I.
Bengal and
North Western
Provinces.

Sir,

I HAVE now the honour to submit the report on the cultivation of cotton in that portion of the Doab which is under my control.

2. There are some 8,000 acres cultivated with cotton. The seed is sown broadcast in the month of March. The cotton grown in the lowlands along the rivers does not require irrigation, and the produce generally is very inferior; and the seed on such unirrigated lands is not sown until July.

3. The cotton grown on the high lands is generally irrigated, always so, where the soil is sandy and thirsty, as about Julundur, Kurtarpore, &c. &c., and such crops will be irrigated five times a year. The weeding takes place in the months of April and May. The picking commences in October. November the cotton is indiscriminately picked, whether, over ripe, it has fallen to the ground; whether clean or dirty; of marketable quality or spoiled by the worm which sometimes attacks the seed. The first picking is the best both as regards quantity and quality; the second and third pickings are inferior.

4. The cotton is separated from the seed by a hand-mill. It stands about two feet high, and has a roller, under which the cotton is placed. One man, working from sunrise to sunset, can clean some 8 lbs. per day!! He certainly cannot clean 10 lbs.; that is to say, 9 lbs. of cotton cleaned cost the cleaner an additional sum of two annas or three-pence.

5. The process of packing is not effected by any machinery, consequently the pressure applied is insufficient to reduce the bulk of the article.

6. I annex a table showing the average cost of cultivation, the average rate of produce, and the average profit per acre. Cotton is a product which certainly thrives best in ground where the water is at a considerable depth below the surface. This is proved by the fact, that cotton grown in the lowlands along the course of rivers is always inferior in quality and in quantity.

Average Produce of Raw Cotton on an English Acre of irrigated Ground.	Value of raw Cotton in Cash.	Average Rent of one Acre of Cotton obtaining in the Villages.	Cost of Irrigation.	Cost of Weeding.	Pickers of Cotton.	Ploughing.	Seed.	TOTAL		
								COST.	PROFIT.	
	<i>Md. sr. ckk.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	
Or English lbs. 692	7 28 -	19 4 -	7 11 -	4 6 -	1 - -	2 6 6	1 4 -	- 3 -	16 14 6	2 5 6
Ditto on irrigated land	- 5 -	12 8 -	5 - -	- - -	1 - -	1 9 -	1 4 -	- 4 -	9 1 -	3 7 -

7. The soil about Julundur is dry and sandy, and the water is at some depth below the surface; I have found that the quantity grown in such soil is considerable, compared with the quantity grown near the Sutlej or Beas.

8. But all such cotton requires irrigation. Irrigation by wells is expensive; moreover, other products yield a much larger return. The return of sugar-cane grown on an acre of irrigated land is in this fertile country equal to 100 rupees. Deducting 35 or 40 per cent. for expenses of cultivation and rent of land, the profit of the cultivator may, in seasons when the frost is not severe, be estimated at 50 or 60 rupees per acre. But with cotton the profits are much less. Hence it is, that although the description of cotton grown in the Doab is fine, and although the plant frequently attains the height of nine or twelve feet, cotton is grown less as an article of trade than for home consumption by the villagers; and hence too it is, that carts and camels laden with bales of cotton can be daily seen arriving in the Julundur market, such cotton having been imported from Hansi and the south at a distance of 130 or 200 miles.

9. After the most careful calculation, I fix the average return of cotton on a given acre at 692 lbs., such raw cotton when cleaned will in my best districts yield one-third, or a fractional part less than one-third of pure cotton. The value of that cleaned cotton may be estimated at 20 rupees 8 annas; the seed (used for feeding cattle) at 4 rupees 6 annas and 3 pie; consequently the whole value per cultivated acre, inclusive of payment of labour of cleaning it and profit of retailer, may be fixed at 24 rupees 14 annas and 3 pie.

10. The general rate of rent current in the Doab is one-half of the produce grown.
296—Sess. 2. In

I.
Bengal and
North Western
Provinces.

In less fertile parts of Hindoostan, the rate of rent does not exceed one-third or two-fifths. Here it has been found, that one-half of the produce suffices to feed and clothe and support the husbandman. But on cotton there is throughout India a fixed money rate. Assuming that in consequence of the greater expense attending the cultivation of this product, the money rent is calculated at one-third of the whole value, we have the best criterion for obtaining the real quantity of cotton grown on a given acre. In no part of the Doab have I found that rate exceed 10 rupees per acre; generally it averages 7 rupees per acre.

11. There is no doubt that the return is small when compared with the produce grown on a given acre in the Hansi and southern districts. But it is a larger average return than is obtained on the experimental farm at Broach.

12. Cotton grown on the thirsty soil of the Julundur must be irrigated: well irrigation is dear, canal irrigation is cheap. The cotton grown in the south is all irrigated by canal. We (as yet) have no canal in the Doab. Moreover, the average rate of produce grown on a given acre of sugar-cane is so enormous, that all the capital of a village (consisting of labour and bullocks) is laid out in the cultivation of sugar, and that quantity of cotton is grown that suffices for the consumption of the village.

13. But if the quantity of produce is deficient, the quality is superior, and the further north we inquire the more superior is the article. When, in October last, I marched with Brigadier Wheeler's force, I found that irrigated cotton between the Ravee and Chenab paid 18 rupees per acre as rent near Amritsur; the rent is certainly equal to 8 rupees 8 annas.

14. But the cotton grown in some parts of the Julundur Doab is finer and softer and whiter than the coarser cotton grown down the country. At Ruhon, in my district, there is a native cloth manufactory conducted by labour of the hand. Coarse cloth is manufactured from cotton imported from across the Sutlej; but the fine cloth (a specimen of which I annex) is manufactured from the fine cotton of the Doab.

15. The cotton plant often attains a height of eight and nine and ten feet when irrigated. It does not spread its branches. Some Egyptian cotton sown by me as late as August attained an inconsiderable height, but spread broad branches. The produce has failed, the frost having set in before the pod was ripe. But the experiment will be renewed next year, and (I doubt not) with greater success.

16. In writing the above report I have shown, I hope, that cotton of the Doab, if inferior in quantity of produce, is superior (in certain localities) in quality. I am of opinion, that if the supply of irrigation was plentiful, the produce would be greater. I attribute the neglect of the cultivation of the article to the too great expense attending irrigation from wells of brick work.

17. I conceive that the experiment of extending and improving the cultivation of this finer cotton should be carefully tried. I shall have occasion to attach certain rent-free wells in every part of my district, and would propose that the land attached to these wells should be set aside for trying this experiment. We, too, have lands in the Doab which are Government lands; the expense would be trifling. I have endeavoured to procure a bale of the best cotton, and shall, when satisfied of the quality, send it to Bombay by the Sutlej and Indus, consigning it to the care of the Secretary to his Excellency Sir Charles Napier.

I have, &c.
(signed) H. Vansittart,
Deputy Commissioner and Superintendent.

Julundur, Deputy Commissioner's Office,
21 December 1846.

From H. Sill, Esq., on special duty, Julundur Doab, to John Lawrence, Esq., Commissioner and Superintendent, Trans-Sutlej Territories.

Sir,

In obedience to instructions conveyed in Mr. Secretary Currie's letter to my address, under date the 7th October 1846, I proceeded from Agra to Julundur for the purpose of examining and reporting on the cotton growing in the Doab, and have now the honour to submit the following report for the information and orders of the Right Honourable the Governor-general.

I commenced my tour of inquiry in the early part of November, and from that period up to the present have visited nearly every portion of the Doab, as well as Noorpoor, and various localities beyond the Beas, where my information led me to suppose I should find cotton of a superior quality.

1. Nature of the Soil.

The first point to be considered is the adaptation of the soil to the growth of the plant, and the flourishing condition of the fields, even at the late season at which I arrived. leaves
no

no room to doubt that it is so adapted in an eminent degree. It differs entirely in appearance from the cotton soil of Bundelcund, but rather resembles some descriptions of American soil, which, according to an analysis by Mr. Piddington, owes its peculiar fitness for the growth of cotton to the lignite which prevails in it. According to the same authority, the kind of soil which ranks second to that of America, is that in which kunkur is either naturally present, or artificially supplied in the form of half-burnt lime; and as throughout the Doab kunkur is found in greater or less degree, it is probable that to this fact the great luxuriance of the cotton plant may partially be ascribed. In addition to natural productiveness, it is to be remarked that great facilities exist for artificial irrigation, and by this means the plant is rendered independent of the chances of the seasons. Water is found in most localities a few feet from the surface of the ground, and the consequence is, that nearly every village abounds with wells.* Formerly, I believe, a canal, cut from the Beas, traversed a considerable extent of the Doab, and as its course is said to be still traceable, it might easily be opened, and at comparatively small cost, rendering a large tract of country unfailingly productive, either for the growth of cotton, or any other description of crop.

2. Quantity of Land under Cotton Cultivation.

I do not imagine that the returns I have been able to obtain on this head are very satisfactory; nor indeed is the point of much importance, as, except in a very limited degree, no cotton is grown beyond what may be required for home consumption. The Purgunnah of Jullundur gives a return of 1,583 gomass,† Rahoon 1,954, whilst Makerian, where I observed the least signs of cotton cultivation, gives 2,605. In every part of the district, however, cotton fields are found, with the exception of those lands which are subject to periodical inundation from the rise of the Beas and Veyn, and those low swampy grounds which prevail in the neighbourhood of Tanda, and other places. † 3,781 square yar

3. Mode of Cultivation.

This depends on the description of land to be brought under tillage; if it is susceptible of irrigation, the ground is prepared, and the seed put in about the end of March; if otherwise, the cultivation commences as in our provinces on the first fall of rain, which generally takes place about the beginning of July; little or no manure appears to be used, and with the exception that the crop is seldom mixed with any other kind of produce, and more care bestowed on keeping the ground free from weeds, there is nothing different from the ordinary native mode of cultivation; the fields are always sown too thickly, and this is especially observable in the irrigated lands, where the plant receiving abundance of nourishment, but having no room to spread, throws up a long, woody, and comparatively unproductive stalk; whereas, had the field been properly thinned, and the plant prevented from attaining too great a height, it would have thrown out lateral branches, bearing pods of increased size, and given a better return to the cultivator, both as regards the quantity and quality of the produce. But however evident it may be that defective cultivation renders the cotton of this country less valuable than it would otherwise be, the great drawback to its being sought after in England is the careless way in which it is picked and cleaned; leaves, earth, and damaged pods are indiscriminately mixed with good cotton, and the result is, that as a marketable article it loses nearly half its value. In proof of this, I may mention that, at Meerthul, I met a party of Beoparees returning from Julundur to Shahpoor with cotton, which they had purchased at 9 rupees 6 annas per maund. I showed them a sample which I had obtained without selection at Pathankot, and taken the trouble to pick and clean perfectly. They said that such cotton would be worth 12 rupees 8 annas per maund, but would not credit me when I told them it was produced within a few miles of Shahpoor.

4. Quantity of Produce.

On this head I am disposed to think very favourably, especially with reference to the general non-employment of manure, and the defective mode of cultivation before adverted to. It appears that the average produce per acre of marketable cotton is 207 lbs. 8 oz. from irrigated land, and 168 lbs. from that which is unirrigated. In an article published in the "Bombay Times" of 11th July 1846, I find it stated that "the average produce of a beegah of marketable wool is 45 lbs." I have been unable to ascertain the extent of the beegah referred to, but on comparing the amount of rent stated by the same paper to be paid for cotton lands with that which is paid by the Superintendent of the Government farm at Broach, I am disposed to fix it as nearly as possible at half an acre, or say 95 lbs. of produce per acre; at all events, it cannot, I imagine, much exceed this quantity, for in the report submitted to the Bombay Government on the operations at the Broach farm for the year 1844-45, I find that the produce is within a mere fraction of 110 lbs. per acre, being less than the returns obtained here by 58 and 97 lbs. respectively in the case of unirrigated and irrigated lands. I have not been satisfied, however, that the quantity of produce has been

* This is only true as regards the Julundur district; the reverse is the case in Hoshiarpore, the cotton country.

(signed) J. Lawrence, Commissioner and Superintendent.

I.
Bengal and
North Western
Provinces.

been stated as high as it actually is. It may at first sight appear that the information sought for could be readily obtained, and that the zemindars could have no reason for withholding it, but I am satisfied the fact is otherwise; they cannot comprehend the object which Government has in view, and are disposed to consider that the inquiry has been instituted in order to obtain grounds for assessing their lands at a higher rate on the expiration of the present limited settlement. At all events, across the Beas, wherever I have had an opportunity of obtaining information, I have found the quantity to be greater than that given by the Jullundhur returns; for instance, between Byrowal and Amritsur, the amount varied from 264 to 306 lbs., whilst, at Deenanuggur, it exceeded the latter rate.

5. Quality of the Wool.

On this head also my opinion is very favourable; the staple is generally very fine and silky; longer, I think, than the native produce usually met with, and free from that tendency to curl which marks coarser cottons; it is principally deficient in strength, but this is an objection which improved cultivation would at once remove. There is no material superiority in the quality of the produce of any one part over another, but the Pergunnah of Rahoon, perhaps, furnishes the best. At the town of this name a considerable trade is carried on in the manufacture of cotton goods for exportation to Kabul, Candahar, and Herat. Part of the raw material is imported from the other side of the Sutlej, but all the finer fabrics are made from the cotton grown in the district. The wool separates easily from the seed, and would not therefore be likely to suffer injury from the saw-gins in the process of cleaning; the proportion also which the weight of wool bears to that of the seed is very favourable, being about 3 per cent. less than would be shown in the produce of lands highly manured and irrigated, and with the benefit of superior cultivation. In the report on the operations at the Broach farm formerly referred to, I find that Mr. Hawley, who is, I presume, the American planter in charge, "believes 28 per cent. to be equal to the yield of the best New Orleans produce." He at the same time gives the per-centage of two kinds of native cotton grown under his own superintendence; one, showing 22½, and the other 28, and this last he considers quite equal in quality to the best New Orleans. I do not agree in the estimate as regards American cotton, because I know that 33 per cent. was obtained at the Bundelkund farms, but as regards his own produce we may receive the statement as correct. Now the return from Doab produce, at the rate of 207 lbs. per acre, gives 30 per cent., and this result I have verified in two or three experiments; and I consider it highly satisfactory, when it is borne in mind that the Broach farm had all the advantages which unlimited means and experienced superintendence could afford.

From the foregoing observations, it will be obvious that the Doab cannot now be considered a cotton-growing country, but it would be fallacious to infer therefrom that it was not adapted to become so. On the contrary, I am of opinion that the nature of the soil, and the facilities of irrigation, combined with improved cultivation, are such as to warrant the most perfect confidence that the Julundur Doab would excel any portion of our territories in the growth of cotton, whether as regards the quantity of the produce, the quality of the wool, or the comparative cost of production.

Camp Dussooah, 27 January 1847.

I have, &c.
(signed) Henry Sill.

(No. 33.)

From Robert Cust, Esq., Deputy Commissioner and Superintendent, Hoshiarpore,
J. Lawrence, Esq., Commissioner and Superintendent, Trans-Sutlej Territories.

Sir,

WITH reference to your letter, No. 60, of 13th ultimo, with regard to the cultivation of cotton in this district, I have the honour to inform you that there are two facts which appear to me to indicate that this is not a "cotton country."

2. In the first place, the importations of cotton from other districts, such as Putteeala, and even as far as Rohtuck, in spite of the heavy duties imposed in the protected Sikh states, is very considerable. Waggons in great numbers are constantly arriving, and since the removal of many of the imposts is visibly increasing. Much of this cotton unquestionably finds its way to Kangra, but still a sufficiently large portion is consumed in this district to indicate that the actual produce of the country does not equal the wants.

3. In the second place, the nerikh* of cotton, as a production of the soil, is very low. I have had numerous opportunities of ascertaining this, in settling the disputes between the jagheerdar and zumeendars. In no case that has come to my knowledge has the nerikh exceeded three rupees per ghomao, while the sugar-cane is generally 18. The cultivation of cotton seems to be confined to a sufficiency for the actual clothing of the zumeendars, and no more.

4. I have

* Market-value: but here apparently the rate of rent of land, according to crop, as adjusted between landlord and tenant.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 359

4. I have forwarded from the Revenue Office the vernacular statements prepared by the tehseeldars for your consideration.

Revenue Office, Hoshiarpore,
9 February 1847.

I have, &c.
(signed) R. Cust,
Deputy Commissioner.

I.
Bengal and
North Western
Provinces.

(True copies.)

(signed) J. Lawrence, Commissioner and Superintendent.

(No. 71 of 1847.)

No. 536.

From John Lawrence, Esq., Commissioner and Superintendent, Trans-Sutlej States, to
H. M. Elliot, Esq., Secretary to the Government of India.

Sir,

With reference to my letter, No. 49, dated the 19th ultimo, submitting a report on the cotton cultivation in the Trans-Sutlej territory, I have the honour to annex copy of a letter, No. 57, dated 21st instant, from the Deputy Commissioner at Jhullundur, informing me that the cotton required for export to England has been sent off *via* Bombay, and explaining the cause of the delay which has arisen.

Commissioner's Office,
Trans-Sutlej States, Camp Dhurmsala,
26 April 1847.

I have, &c.
(signed) J. Lawrence,
Commissioner and Superintendent.

(No. 57.)

From H. Vansittart, Esq., Deputy Commissioner and Superintendent, Jalundhur, to
John Lawrence, Esq., Commissioner and Superintendent, Julundur Doab.

Sir,

In reply to your letter, No. 503, dated 16th instant, I have the honour to inform you that the cotton has this day been despatched *via* the Sutlej and Indus.

2: It was my wish to clean the cotton with a gin received some two months ago.

3. But the machinery was out of order; and when that was righted, there was no cleaning-house prepared. Hence a delay has arisen.

4. The cotton is not of the first quality grown, it being of the second picking. I was on the Chenab when instructions were received regarding the purchase of cotton. The first picking was over before I, on my return, had an opportunity of learning which was the best cotton district of this part of the Doab, and of making the purchase required.

Julundur,
Deputy Commissioner's Office,
21 April 1847.

I have, &c.
(signed) H. Vansittart,
Deputy Commissioner and Superintendent.

EXTRACT from a Despatch from the Government of India to the Honourable the Court of Directors in the Home Department, under date 14 August 1848, No. 41.

28. In continuation of para. 34 of letter No. 51, dated 10th December 1847, the accompanying papers * will inform your Honourable Court that the late Governor-general sanctioned, as a special case, the grant to Dr. Sill of his full allowances during the three months he was on leave at Simla. Full allowances granted to Dr. Sill during the period he was on leave at Simla. His service placed at the disposal of the Commander-in-Chief.

29. The object of Dr. Sill's deputation to the Julundur Doab, to report upon the cotton of that province, having been fulfilled, his services were, at the expiration of his leave, placed at the disposal of the Commander-in-Chief.

* Home Cons., 17 July 1847, No. 20. Home Cons., 7 August 1847, Nos. 4 and 5. Letter from Secretary to the Government of the North Western Provinces to the Secretary with the Governor-general, dated 27 July 1847, No. 378 A. Home Cons., 11 September 1847, Nos. 1, 5, and 7.

I.
Bengal and
North Western
Provinces.

EXTRACT of a Letter from the Honourable the Court of Directors to the Governor-General of India in Council, dated 19 July (No. 6) 1848.

Para. 4. WE forward herewith copy of the report by Messrs. Tetley & Son, on the sample bale of Julundur Doab cotton, which was forwarded to us by the Government of Bombay in the "Malacca":

"Sir,

"London, 31 March 1848.

WE have examined the quality of the small bale cotton arrived by the 'Malacca,' from Bombay, for the Honourable East India Company. There is nothing particular to be remarked upon in its favour. It much resembles a fair quality Bengal. The staple is short, and therefore would not do for general purposes. It is pretty well cleaned from leaf and seed. In the present depressed state of the cotton market, the value may be quoted at 3 *d.* to 3 $\frac{1}{4}$ *d.* per lb.

"F. W. Prideaux, Esq.,
East India House."

"We are, &c.
(signed) "J. R. Tetley & Son."

EXTRACT Agra Revenue Narrative, North Western Provinces, dated 24 October, No. 3, 1848.

Para. 58; Narr.
No. 2 of 1848.
Rev. Pros. May
1848, No. 43.

74. WITH reference to instructions of the 31st March, the Resident at Katmandoo reported that the information he had obtained did not accord with the impression that considerable quantities of cotton wool were transported through Nipal into Thibet, but there was an exportation of webs to the regions beyond the Snowy Range; though, from the cost of conveyance and the difficulties of the transit, it could not be conducted upon a very extensive scale.

EXTRACT from the Proceedings of the Honourable the Lieutenant-Governor of the North Western Provinces, in the Revenue Department, dated 5 May 1848.

(No. 22 of 1848.)

From Major *C. Thoresby*, Resident at Nipal, to *J. Thornton*, Esq., Secretary to the Government of the North Western Provinces, Agra.

Sir,

I HAVE had the honour to receive your letter, No. 1291, dated the 31st ultimo, with accompanying extract para. 18 from Mr. C. Allen's letter of the 16th idem, relating to the cotton trade of India.

2. The concluding lines of the extract mention that the merchants here say, that "considerable quantities of cotton are sent from Mirzapoor to Patna for transmission up the Gunduck, across Nipal and the mountains to Thibet and the western provinces of China;" but the information I have received on the subject does not accord with this impression; nor does it appear to me to be probable that the carriage of cotton wool to so great a distance, over a difficult country upon men's backs, would be found a remunerative speculation. There is, however, an exportation to the regions beyond the Snowy Mountains of bales of woven pieces, both plain and dyed, chiefly of the coarser kind, that is worth noticing, although from the difficulties and cost of conveyance it cannot be carried upon a very extensive sale. A portion of this cloth is brought from the plains, and part of it is manufactured in the Nipalese district.

3. Cotton is raised in many of the villages within the hills of Nipal, but, as may be naturally supposed of it, is of inferior quality, and the supply thus produced is insufficient for the wants of the country. The deficiency is made up in part by importations from below, and on the whole there may be some considerable quantity introduced throughout the several provinces to be worked up at home, though the manufactured cloth seems generally to have the preference, on account of the lower ratio of the cost of transit.

Nipal, Residency Office,
20 April 1848.

I have, &c.
(signed) *C. Thoresby*,
Resident, Nipal.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 361

EXTRACT from Revenue Narrative (No. 3), dated 16 December 1850.

Para. 81. The Collector of Cawnpore, in forwarding, for the inspection of his Honour, specimens of Mexican seed cotton and cotton wool, produced by Mr. Bruce, Uncovenanted Deputy Collector, from seed procured from Coimbatore, through the Horticultural Society in Calcutta, remarked that he had already submitted a specimen to Mr. H. H. Bell, at Agra, who had reported most favourably upon it. The Lieutenant-governor forwarded the specimens to the Agricultural and Horticultural Society in Calcutta, and requested that the cotton might be subjected to examination, and that such notice of the experiment as might appear called for be inserted in the Society's Journal.

I.
Bengal and
North Western
Provinces.

Cotton.

Specimens of Mexican seed cotton, and cotton wool. Rev. Pro. June 1850, No. 255 to 257.

EXTRACT from the Proceedings of the Honourable the Lieutenant-Governor of the North Western Provinces, in the Revenue Department; dated 28 June 1850.

(No. 454 of 1850.)

No. 253.

From *E. H. Morland*, Esq., Collector of Cawnpore, to *J. Thornton*, Esq., Secretary to Government North Western Provinces, Agra.

Sir,

At the request of Mr. Bruce, Deputy Collector of Cawnpore, I take the liberty of sending, for the inspection of his Honour the Lieutenant-governor, specimens of Mexican seed cotton and cotton wool, produced by him from seed procured from Coimbatore, through the Horticultural Society in Calcutta.

2. I have the less hesitation in sending the cotton, as I have already submitted a specimen to H. H. Bell, esq., at Agra, who has reported most favourably upon it; an extract of his letter I beg to add: "I think it very desirable that some should be sent home, to show what quality can be grown in this country; if Mr. Bruce could cultivate, commercially, which is very different from a garden sample, such cotton yielding four maunds per pucka beegah, he will have solved the problem of the ability of India to compete with America. I do not think the seed forms more than two-thirds of the weight of the kupas, and if so, Mr. Bruce produces about 547 lbs. of kupas, or 182 lbs. of cotton per acre, whereas the American average is said to be 125 lbs. clean cotton per acre. I think the sample the best cotton I have seen in this country."

3. I have proposed to the Central Committee that specimens of this cotton be forwarded to the grand Exhibition of the Works of Art and Industry in London.

4. In conclusion, I beg to add an extract from Mr. Bruce's letter to my address, relative to the cultivation and out-turn of his experimental crop: "The seed from Coimbatore did not reach me before the middle of July last year. As a good deal of the season had passed away, and I could not get to Bundelkhand, I merely, by way of experiment, and to test the seed, had about a beegah of land in my compound sown. From the land being properly manured, ploughed and weeded, the produce turned out very favourable. Each plant had from 50 to 60 bolls or capsules during the first or autumn crop, and about the half of that number from the second or spring crop from the same plants

"I have collected altogether, up to the present time, about six maunds of kupas, or seed cotton, and expect from it about two maunds of cotton wool, and four maunds of seed. The produce would have been more favourable, but the great quantity of rain which fell here in the month of January, and the frost we had immediately after, injured not only the pods but the plants also."

Cawnpore Collector's Office,
6 June 1850.

I have, &c.
(signed) *E. H. Morland*, Collector.

The following letters are written:—

(No. 1930.)

No. 256.

From *R. Thornton*, Esq., Assistant Secretary to the Government North Western Provinces, to the Secretary Agricultural and Horticultural Society, Calcutta.

Sir,

I AM directed by the Honourable the Lieutenant-governor to transmit to you the accompanying copy of a letter (No. 454) from the Collector of Cawnpore, dated the 6th instant, together with the specimens of Mexican seed cotton and cotton wool, produced by Mr. J. G. Bruce from seed received from Coimbatore, in Madras. The Lieutenant-governor requests that

Revenue Department.

296—Sess. 2.

Z z

the

I.
Bengal and
North Western
Provinces.

the cotton may be subjected to examination, and that such notice of the experiment, as may appear called for, may be inserted in the Society's Journal.

I am, &c.

(signed) *R. Thornton,*

Assistant Secretary to the Government N. W. P.

Head Quarters, 28 June 1850.

No. 257.

(No. 1931.)

From *R. Thornton, Esq.*, Assistant Secretary to the Government North Western Provinces, to the Collector of Cawnpore.

Sir,

Revenue Department.

I AM directed by the Honourable the Lieutenant-governor to acknowledge the receipt of your letter (No. 454) dated the 6th instant, and, in reply, to inform you that the specimens of Mexican seed cotton and cotton wool, received with your letter under reply, have been forwarded to the Agricultural and Horticultural Society at Calcutta for examination. The Society have been requested to insert in their Journal such notice of the experiment as they may consider it deserving of.

I am, &c.

(signed) *R. Thornton,*

Assistant Secretary to the Government N. W. P.

Head Quarters, 28 June 1850.

(True extracts.)

(signed) *W. Blackburn,*

Reporter of Proceedings.

EXTRACT from Revenue Narrative (No. 1), dated 11 April 1851.

Cotton.

Collection No. 4.
Report of Agricultural Society on musters of cotton. Para. 81 Rev. Nar., No. 3 of 1850; Rev. Pro., Nov. 1850, No. 313.

84. This paper contains a report of the Committee of the Agricultural Society in Calcutta on the specimens of Mexican seed cotton and cotton wool, produced by Mr. J. G. Bruce from seed received from the Government farm at Coimbatore. The report of the committee was very favourable.

EXTRACT from the Proceedings of the Honourable the Lieutenant-Governor of the North Western Provinces, Revenue Department, dated 23 November 1850.

No. 313.

From *James Hume, Esq.*, Honorary Secretary Agricultural and Horticultural Society, Calcutta, to *R. Thornton, Esq.*, Assistant Secretary to the Government North Western Provinces, Agra.

Sir,

I AM directed by the Agricultural and Horticultural Society to acknowledge the receipt of your letter, No. 1930, dated 28th June 1850, and of the specimens of Mexican seed cotton and cotton wool, produced by Mr. J. G. Bruce from seed received from the Government farm at Coimbatore; and to annex, for the information of the Honourable the Lieutenant-governor, an extract from the report of the Society's committee on these musters.

I may add, that the Society intend, on the recommendation of the committee, to transmit these, with a few other specimens of a superior description, for report to the East India and China Association.

I am, &c.

(signed) *Jas. Hume,*

Honorary Secretary A. and H. S.

Metcalf Hall, Calcutta,
7 November 1850.

Cawnpore.

L. Samples 1, 2 and 3.

No. 1. Bolls; No. 2. Kupass; No. 3. Cleaned cotton.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 363

SAMPLES of Bolls, Kupass, and Cleaned Cotton, raised at Cawnpore by Mr. J. G. Bruce. See Letter from Mr. R. Thornton, Assistant Secretary North Western Provinces, dated 28 June 1850.

I.
Bengal and
North Western
Provinces.

BOLLS large and well filled; kupass very clean; the cotton, which has been divested of the seed, also very clean, and of good colour; staple fine, very beautiful specimens, and fully equal to the Chittagong. Valued at 5½ d. per lb.

In regard to valuations on the above musters, we have been governed by the first seven months' prices of 1849, as being perfectly safe; while the excessive prices at present (September) ruling appear to be caused by actual short production in the United States, and by speculation in consequence. The valuations given are those of a competent party, of Manchester experience.

(True extracts.)

(signed) W. Blackburn, Reporter of Proceedings.

(No. 5 v.)

EXTRACT from a General Letter from the Government of Bengal to the Honourable the Court of Directors, in the Revenue Department, No. 2 of 1852; dated 4 February.

Para. 55. The Sudder Board of Revenue submitted a copy of a communication from the superintendent of Darjeeling, containing an application for 2,000 rupees, which he intended to devote to the purchase and distribution of 20 maunds of acclimated Mexican cotton seed from Coimbatore, for which he had indented on Government, and soliciting authority to advance* 5,000 rupees in the shape of tuccavee to industrious settlers in the Morung, with the view of encouraging an improved and increased cultivation of cotton and other products there.

Darjeeling.

Dr. Campbell's indent for Mexican cotton seed, and his application to be authorised to make an advance to settlers in the Morung in the shape of tuccavee.

Rev. Pro. 27 August 1851, Nos. 108 and 109; 8 October 1851, Nos. 7 and 9; 12 November 1851, Nos. 2 and 3, and Nos. 66 and 68; 10 December 1851, Nos. 40 and 44; 26 December 1851, Nos. 15 and 16.

56. The Board were informed in reply, that the Deputy-governor authorised the superintendent of Darjeeling, as an experimental measure, to make tuccavee advances through the chowdries to the extent of 5,000 rupees, repayable at fixed seasons, with interest at five per cent. per annum, and that whatever might be the expense of getting the cotton seed from Coimbatore to Calcutta, it would be defrayed by Government direct from this office. The seed, it was intimated, had arrived in Calcutta, and Dr. Campbell had been informed by a letter from this office direct, that it would be forwarded by steamer as far as practicable, the arrangement for its transport by land being left to the suggestion of that officer. If any expense was necessary for that purpose, it was observed to the Board that it could be sanctioned hereafter, though the Deputy-governor could not perceive what other expenses were needed, except as regarded the above contingency.

57. It was further intimated to the Board, that if there should be any further expenses, application should be made previously for permission to make disbursements, when the Deputy-governor would be prepared to sanction any distinct items of expenditure on that account which might be reasonable and necessary, and which the Board might recommend.

58. At the suggestion of Dr. Campbell, the seed was subsequently forwarded by steam to the care of the collector of Purneah, with whom that officer had arranged for its transport to Darjeeling.

EXTRACT from the Proceedings of the Government of Bengal, in the Revenue Department, under date 27 August 1851.

(No. 412 of 1851.)

No. 108.

From A. Campbell, Esq., Superintendent of Darjeeling, to J. P. Grant, Esq., Secretary to the Government of Bengal, Fort William.

Sir,

TAKING Dr. Knight's experience as my guide, I believe that the surest mode of introducing improved sorts of cotton into the Morung will be to procure acclimated Mexican and other

* Originally proposed in his Revenue Report on the Sikhim Morung for the year 1850-51. See Pol. Pro. 30 July 1851, Nos. 97 to 100.

I.
Bengal and
North Western
Provinces.

other seaboard cotton seeds for distribution and trial. I have therefore the honour to solicit the assistance of Government in this matter, as the only means, I believe, of obtaining the seeds in question in sufficient quantity. I should like, if possible, to procure 20 maunds of the best acclimated seed of at least eight generations from Dr. Wight direct, so as to reach Titlyah in all February or March next. If the seed is carefully packed in tins, each containing 15 seers, sent to Galle, and thence brought to Calcutta in one of the Oriental and Peninsular Company's steamers, I shall arrange for its speedy transmission hither on being advised of the steamer by which it may be expected.

I have, &c.
Superintendent's Office, Darjeeling, (signed) *A. Campbell*, Superintendent.
14 August 1851.

No. 109.

(No. 226.)

From *W. Seton Karr*, Esq., Under Secretary to the Government of Bengal, to *T. Pycroft*, Esq., Secretary to the Government of Fort St. George.

Sir,

Revenue.

I AM directed by the Deputy-governor of Bengal to request that, with the permission of the Right honourable the Governor in Council, instructions may be issued to the superintendent of cotton plantations at Coimbatore to procure 20 maunds of acclimated Mexican and other seaboard cotton seeds of at least eight generations, packed in tins of 15 seers each.

2. The seed which is intended for trial in the Sikkim Morung should reach Calcutta in February or March next, by one of the Peninsular and Oriental steamers, addressed to this office.

I have, &c.
Fort William, (signed) *W. Seton Karr*,
27 August 1851. Under Secretary to the Government of Bengal.

(No. 227.)

COPY forwarded to the superintendent of Darjeeling with reference to his letter, No. 412, of the 14th instant.

EXTRACT from the Proceedings of the Government of Bengal, in the Revenue Department, under date 8 October 1851.

No. 7.

(No. 475.)

EXTRACT of a Letter from the Officiating Secretary to the Board of Revenue, Lower Provinces, to *J. P. Grant*, Esq., Secretary to the Government of Bengal, Revenue Department.

3. In the seventh para. of his letter the superintendent trusts that the Board will recommend that the sum of 2,000 rupees be placed at his disposal, for the purchase and distribution of acclimated cotton seed; and in the eighth para. he suggests that he be authorised to make tuccavee advances to the extent of 5,000 rupees, to be disposed of as suggested in your letter of the 29th July, and to be repayable at fixed seasons, with interest not exceeding five per cent. We would make the chowdries the medium of these advances, taking care, in every case of disbursement, to satisfy himself as to the character, habits, and position of the individuals who may be recommended by them, and making them (the chowdries) responsible for the security of the amount advanced.

4. It appears that Dr. Campbell has already asked the assistance of Government to procure him 20 maunds of acclimated Mexican seed, and the Board presume that it is to defray the expenses of this indent that he requires money. But the Board observe that 2,000 rupees seems an unnecessarily large sum for the purpose. They would recommend that, in the first instance, Dr. Campbell should be authorised to disburse only sufficient to cover the expense of the indent which he has made, and that he be requested to submit an estimate of what that expense is likely to be, and to explain in what manner he proposes to lay out the remainder of the sum which he has asked for "to be devoted to the purchase and distribution of cotton seed."

5. With reference to the proposed disbursement of 5,000 rupees in the shape of tuccavee, the Board understanding from your letter above referred to that his Honour is prepared to consider favourably of such a proposition, have only

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 365

only to remark that the plan on which Dr. Campbell proposes to make the advances seems unobjectionable, and that they are not disposed to demur to the experiment being tried.

I.
Bengal and
North Western
Provinces.

I have, &c.
(signed) *A. C. Bidwell*,
Officiating Secretary.

Fort William, 19 September 1851.

(No. 419.)

No. 8.

EXTRACT of a Letter from *A. Campbell*, Esq., Superintendent of Darjeeling, to the Officiating Secretary to the Board of Revenue, Fort William.

7. Regarding the increase and improvement of the cotton cultivation, I am still sanguine. I believe, if we can get acclimated Mexican and New Orleans seed from Dr. Wight, of Coimbatore, in sufficient quantity, that we may succeed in improving the staple greatly, and I am sure that the quantity may be increased by the judicious outlay of some capital to the Meches and Dhimals, if not by inducing the Dhangurs of Chota Nagpoor to settle in the cotton tracts; I should, however, prefer that the improvement of the staple by Government may induce private individuals to try the extension of the cultivation, and in the meantime I hope that the Board will recommend *Rs. 2,000* to be placed at my disposal for the purchase and distribution of acclimated seed, to which alone I would confine my cotton operations until a crop, or crops, from the new seed may be procured; after which I should be disposed to advance money for the purpose of increasing the improved kinds only, if private enterprise did not take the matter up. I have the honour to annex copy of an application to Government for seed, of the 14th instant, No. 412, for the Board's information.

8. Regarding my proposition to lay out three years' revenue in advances for clearing and cultivating the forest, and the further information required by the Board, I beg leave to state that at the time I proposed it, I fully felt the difficulties which would attend the execution of an excellent plan. I know that if I was proprietor of the Morung, with capital to work it, one of my first steps would be to lay out money in the way proposed, and what would be the interest of a proprietor becomes equally so that of Government under all the existing circumstances in this tract of country; but the great difficulty lies in a Government officer making advances of Government money, so as at the same time to secure them, and his own credit for the judicious disposal of his trust. After considering the matter in many lights, I am disposed to think that the safest and most effectual mode will be to make the chowdries the media of advances, taking care in every case of disbursement to satisfy myself as to the character, habits, and position of the individuals who may be recommended by the chowdry, and for whom he is to be security in the amount advanced. I shall, therefore, be glad if the Board will procure the sanction of Government to *Rs. 5,000* to be at my disposal for advances, and to be disposed of as suggested in Mr. Grant's letter to your address of the 29th July, No. 164, "in the shape of tucavee repayable at fixed seasons with moderate interest." The interest not to exceed 5 per cent.

I have, &c.
(signed) *A. Campbell*,
Superintendent.

Superintendent's Office, Darjeeling,
18 August 1851.

(No. 1275.)

No. 9.

From *W. Seton Karr*, Esq., Under Secretary to the Government of Bengal, to *A. C. Bidwell*, Esq., Officiating Secretary to the Board of Revenue.

Sir,

I AM directed by the Deputy-governor of Bengal to acknowledge the receipt of your letter, No. 475, dated the 19th ultimo, and with reference to a sum of *Rs. 2,000* required by the superintendent of Darjeeling, for the purchase and distribution of acclimated cotton seed, to state that an application has already been made to the Madras Government at the instance of that officer, made direct to this Government, for 20 maunds of acclimated Mexican cotton seed. His Honour consequently does not perceive for what object the proposed outlay is intended, and he is unable to sanction it without further explanation.

2. His Honour authorises the superintendent of Darjeeling, as an experimental measure, to make tucavee advances through the chowdries to the extent of *Rs. 5,000*, repayable at fixed seasons, with interest at 5 per cent. per annum.

3. The enclosure received with your letter is herewith returned, a copy having been kept for record.

I have, &c.
(signed) *W. Seton Karr*,
Under Secretary to the Government of Bengal.

Fort William, 8 October 1851.

I.
Bengal and
North Western
Provinces.

EXTRACT from the Proceedings of the Government of Bengal, in the Revenue Department under date 12 November 1851.

No. 2.

(No. 1045.)

From *T. Pycroft*, Esq., Secretary to the Government, Fort St. George, to *J. P. Grant*, Esq., Secretary to the Government of Bengal.

Revenue Depart-
ment.

Sir,

WITH reference to Mr. Seton Karr's letter of the 27th August 1851, No. 226, I am directed by the Right honourable the Governor in Council to forward copy of a communication from Dr. Wight, relative to the cotton seed required for experimental purposes in the Sikkim Morung, and of the instructions issued thereon.

I have, &c.
(signed) *T. Pycroft*,
Secretary to Government.

Fort St. George, 21 October 1851.

No. 3.

From Dr. *R. Wight*, Superintendent Cotton Experiments, Coimbatore, to *T. Pycroft*, Esq., Secretary to Government, Fort St. George.

Sir,

ADVERTING to extract from the Minutes of Consultation, under date the 12th September 1851, I have the honour to report that I have this day dispatched to the collector of Sea Customs, Madras, for transmission to the Bengal Government, 1,500 lbs. of acclimated Mexican and 300 lbs. of Bourbon cotton seed, with a request that he should pack and dispatch them in tins of 15 seers each, as requested by Mr. Under Secretary Seton Karr.

It may be as well to mention that the Mexican seed now sent was not Government property, but had to be purchased to meet this requisition from Bengal. The price charged for it is 10 rupees per candy of 500 lbs. The Bourbon, being now in general cultivation, is cheaper, being only about five rupees the candy.

I have, &c.
(signed) *Robert Wight*,
Superintendent Cotton Experiments.

Coimbatore, 3 October 1851.

EXTRACT from the Proceedings of the Government of Bengal, in the Revenue Department, under date 26 November 1851.

No. 15.

(No. 551.)

From the Officiating Secretary to the Board of Revenue, Lower Provinces, to *J. P. Grant*, Esq., Secretary to the Government of Bengal, Revenue Department; dated Fort William, 7 November 1851.

Sir

Land Revenue.
Present:
E. M. Gordon, esq.

WITH reference to para. 1 of the Orders of Government, dated the 8th ultimo, No. 1275, I am directed by the Board of Revenue to submit, for the consideration and orders of the Honourable the Deputy-governor, a copy of a letter from the superintendent of Darjeeling, No. 518, dated the 28th ultimo, containing further explanation relative to his application for a sum of 2,000 rupees, to be devoted to the purchase and distribution of cotton seed.

I have, &c.
(signed) *A. C. Bidwell*,
Officiating Secretary.

(No. 518 of 1851.)

From *A. Campbell*, Esq., Superintendent of Darjeeling, to the Officiating Secretary, Board of Revenue, Lower Provinces, Fort William.

Sir,

Revenue Depart-
ment.

I HAVE the honour to acknowledge the receipt of proceedings of the Board, No. 383, dated 17th instant, with copy of a letter from the Under Secretary to the Government of Bengal, to your address, No. 1275 of the 8th of October, and of your letter to the Secretary to the Government of Bengal, of the 19th September, No. 475, to which the former is a reply.

2. With reference to my application for 2,000 rupees, to be devoted to the purchase and distribution of cotton seed, it was, as presumed by the Board, to defray the expenses of my indent for seed already made on the Government, and for any further supplies I might require.

I do.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 357

L
Bengal and
North Western
Provinces.

3. I do not require the advance of this amount, except as sums may be necessary to pay actual expenses, but it is the total extent to which I desired to have the sanction of Government for the purpose indicated. I do not at all know what may be the charges on getting seed from Coimbatore, and there may be some petty additional sums for carriage of seed from the Agricultural Society of Calcutta, but as far as it will depend upon me they will be as low as possible.

4. If, however, it is preferable to the Board to have the bills for charges submitted for its sanction, without procuring the previous sanction of Government to any specific sum, it will equally suit me, so long as I know that the necessary disbursements may be made in advance.

I have, &c.
(signed) *A. Campbell*, Superintendent.

Superintendent's Office, Darjeeling,
28 October 1851.

Board of Revenue, L. P., Fort William,
7 November 1851.

(A true copy.)
(signed) *A. C. Bidwell*, Offig. Secy.

(No. 1464).

No. 16.

From *W. Seton Karr*, Esq., Under Secretary to the Government of Bengal, to
A. C. Bidwell, Esq., Officiating Secretary.

Sir,

I AM directed by the Deputy-governor of Bengal to acknowledge the receipt of your letter, No. 551, of the 7th instant, and to inform you that whatever may be the expense of getting the cotton seed from Coimbatore to Calcutta, it will be defrayed by Government from this office direct. The seed has arrived in Calcutta, and Mr. Campbell has been informed, by a letter direct from this office, that the seed will be forwarded by steamer as far as possible, and that he is to suggest what arrangement he can make for its transport by land. If any expense is necessary for this purpose it can be sanctioned hereafter. But his Honour does not perceive what other actual expenses there need be, except as regards the above contingency.

2. If there should be any other expenses, application should be made previously for permission to make disbursements, and his Honour will be prepared to sanction any distinct items of expenditure on this account which may be reasonable and necessary, and which the Board may recommend.

I have, &c.
(signed) *W. Seton Karr*,
Under Sec. to Govt. of Bengal.

Fort William,
19 November 1851.

Home Department.—(No. 56 of 1848.)

To the Honourable the Court of Directors of the East India Company.

Honourable Sirs,

WE have the honour to forward for your information the accompanying copies of papers regarding an improved cotton cleaning machine invented by Mr. Mather.

2. This gentleman was employed by the Government of the North Western Provinces on a salary of 300 rupees a month, to make up a dozen of the new machines for introduction into those provinces, and for a connected statement of his proceedings we beg to refer your Honourable Court to a report from Mr. Simms, dated the 7th of August last. An expense of 4,080 rupees has been incurred on the construction of the 12 machines intended for Agra. Mr. Simms has explained the causes which induced so unexpectedly large an expenditure,
296—Sess. 2. z z 4 and

L
Bengal and
North Western
Provinces.

and we are assured that the cost of constructing others will not exceed 60 rupees each, provided 50 be made at the same time. The delay in the completion of the machines was attributed to the very great difficulty in ensuring the attendance of workmen at the Fort Gloster Mills, where Mr. Mather was carrying on his work. He has now been permitted to remove his work to the Iron Bridge Manufactory at Calcutta, where he will not only be able to command more regularity of attendance on the part of workmen, but will possess other facilities for prosecuting his task.

3. The Governor-general has witnessed the experimental working of one of these machines, and has stated his opinion that, so far as he could judge, it seemed calculated to effect the desired object, and was certainly much superior to any which he saw placed in competition with it. Attaching much importance to the introduction of improvements in the cleaning of cotton in India, we have authorised Mr. Mather to construct a few more sets of the machine, and as they are completed, we propose to forward them for trial in the cotton-growing districts under the several presidencies.

4. In consideration of the circumstances represented in his letter, dated the 28th ultimo, and in the 14th para. of Mr. Simms's report, dated the 7th August last, we have granted Mr. Mather, while he is employed upon this work, a salary of 400 rupees a month, commencing from the present date, up to which time he will continue to draw his allowance from the Agra Government.

We have, &c.
(signed) *T. H. Maddock.*
F. Millett.
J. H. Littler.

Fort William, 21 October 1848.

From *F. W. Simms*, Esq., Consulting Engineer to the Government of India, and Director of the Railway Department, to *G. A. Bushby*, Esq., Secretary to the Government of India.

Sir,

In accordance with your wishes, I have examined the plans of the proposed cotton-cleaning machines laid before me by Mr. J. H. Mather, the mechanical engineer, and have to submit the following remarks:

1. The original native machine for cleaning the cotton called the churka appears not to be badly adapted for the purpose, and with the alterations and additions proposed, and now being applied thereto by Mr. Mather, promises, in my opinion, to correct its defects, and supply what is wanting to make it effectually answer. As it now stands, it frees the cotton from the seeds effectually, but does not remove the bits of leaves and other trash which it contains, and which it is necessary to remove to render the article marketable. I would also notice that the 4-threaded endless screw, for driving the upper roller, is an objectionable application.

2. The machine constructed at Manchester, which Mr. Mather called "Mr. Potter's," I have also seen. It has a defect which the native churka is free from, namely, the large size of the wooden roller, which allows of many of the seeds passing through them with the cotton (arising from the seeds varying in size); these mostly get crushed in the passage, and the oil (as I suppose) being liberated, stains a considerable portion of the cotton in which they have been crushed; besides this, the seeds are lost, and their fragments have also to be separated, in addition to the beforenamed extraneous matter. The above is not the only defect in this machine: the arrangement of the screws, &c., for pressing down the upper roller is bad, and the bearings for the shafts are deficient.

3. The new arrangement of the churka now being made by Mr. Mather was lastly brought to my notice, and appears to be very important; the chief alterations are the following: A decrease in the size of wooden roller to nearly the mean diameter of that in the native churka, which I expect will ensure a perfect disengagement of the cotton seeds without injuring them, so that they will all be available for further cultivation. Also the introduction of a fan, with brushes attached to its arms, and adjusted to touch the roller three-quarters of an inch below the line of contact of the two rollers through which the cotton passes, thus avoiding the shortening or tearing of the staple. Next the iron grid placed below the brush fan, through which the dust and refuse fall away from the cotton. The boxing-up of the machine, and making it deliver the cleansed cotton into an adjoining room; and, lastly, the introduction of weights for pressing down the upper roller instead of screws, &c.

I would also observe, that the arrangement of the spur-wheel, and pinion of the new machine for communicating motion, is infinitely preferable to the endless screw of the original churka.

With

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 369

With the above alteration and arrangements I expect that the machine will be found to answer all the purposes desired, but it would be advantageous if the Honourable the Lieutenant-governor of the North Western Provinces would direct that a supply of seed cotton (or kupas), not less than three maunds, be forthwith remitted to Calcutta, to determine by actual experiment the real merits of the machine before it leaves the workshop, that any alteration suggested thereby may be made.

L
Bengal and
North Western
Provinces.

Calcutta, 10 January 1848.

I have &c.
(signed) F. W. Simms, c. E.

From F. W. Simms, Esq., Consulting Engineer, to G. A. Bushby, Esq., Secretary to the Government of India.

Dear Sir,

YESTERDAY I visited Fort Gloster, and examined into the progress of Mr. Mather respecting the cotton cleansing machine for the Government of the North Western Provinces, and I have much pleasure in reporting that one of them is complete, and appears to answer admirably; the remainder are in an advanced state. I enclose for your information a report by Messrs. Munro and Morrison, whom as practical men lately arrived from England, I requested to give me their opinion upon the cotton when turned out from the churka. As respects the exhibition of the machine as proposed by you, the arrangements Mr. Mather is making are very suitable, and I think your suggestion of asking the Governor General to witness the exhibition will be very desirable, as I feel confident that it will be satisfactory to his Lordship.

I remain, &c.
(signed) F. W. Simms, c. E.

Messrs. W. Munro and A. Morrison, Carding and Spinning Masters, to F. W. Simms, Esq., Consulting Engineer to the Government of India.

Sir,

WE have very carefully examined the small cleaning machine for cotton which has lately been made up at these mills for Government, and it appears to be a very considerable improvement on the native Indian churka, which we have also seen at work.

The cotton turned out from the native churka is always in a matted state, and the fibres lying confused in different directions, and when it comes to the mill the carder has a good deal more trouble with it than he has with the American cotton used in England, which always comes to hand with the fibres lying in the same direction, or nearly so; there is also a good deal of dirt and waste always to be found in the cotton cleaned by the Indian churka, which defies all our endeavours to remove.

This new machine, however, has the great advantage of having a fan attached to it, on the arms of which strong whalebone brushes are fixed, and beneath the fan is a light iron grating. The action of the brushes not only serves to shake out the dirt, &c., from the cotton, but it also has the effect of opening out the fibres, and laying them similar to the American cotton noticed, and delivering it in a state far better suited for the carding engine than that cleaned by the churka.

We have seen a considerable quantity of seed cotton passed through the new machine; it was, however, the cotton of an old crop which had become parched and dried, and was, therefore, much more difficult to separate from its seed than the cotton of the current crop would be. But notwithstanding this serious disadvantage, we fully consider that the new machine turns out cotton quite as clean as it is desirable to have it brought to the mill, and that any further expense in picking it over with the hand, or applying additional machinery to it would be quite thrown away, and as regards the straightness of the fibres would be probably injurious.

We are, &c.
(signed) W. Munro, Carding Master.
A. Morrison, Spinning Master.

Fort Gloster Mills,
9 February 1848.

From J. H. Mather, Esq., Civil Engineer attached to Government Cotton Experiments, North Western Provinces, to G. A. Bushby, Esq., Secretary to the Government of India.

Sir,

WITH reference to the work on which I am at present engaged for the Government of Home Department, the North Western Provinces, and which has been frequently brought to your notice during the last two months, I have now the honour to request that copies of the papers relating to the improvements which I have lately introduced into cotton-cleaning machinery, including the several reports thereon furnished for the information of his Honor the Lieutenant-

296—Sess. 2.

3 A

Governor,

370 PAPERS RELATING TO MEASURES TAKEN SINCE 1847

I.
Bengal and
North Western
Provinces.

Governor North Western Provinces, by Mr. F. W. Simms, Consulting Engineer to the Government of India, may be forwarded to the local Governments of Bengal, Madras, and Bombay.

I have, &c.

(signed) *J. H. Mather,*

Civil Engineer attached to Government Cotton Experiments,
North Western Provinces.

Fort Gloster Mills,
23 February 1848.

From *G. A. Bushby*, Esq., Secretary to the Government of India, to Secretaries to the Governments of Bengal (No. 278), Fort St. George (No. 230), and Bombay (No. 231).

Sir,

Home Department.
Madras and Bom-
bay Honourable
the Governor in
Council

I AM directed to transmit for the information of the Right Honourable the Governor, the accompanying copies of papers respecting a new cotton machine, or "improved Indian churka," invented by Mr. J. H. Mather, Civil Engineer, for the experimental cotton works in the North Western Provinces.*

I have, &c.

(signed) *G. A. Bushby,*
Secretary to the Government of India.

Fort William,
4 March 1848.

(No. 3762.)

From *C. Allen*, Esq., Officiating Secretary to Government in the North Western Provinces, to *G. A. Bushby*, Esq., Secretary to the Government of India, Home Department, Fort William.

Sir,

Revenue Depart-
ment.

IN my predecessor's letter to you, dated May 19th last, the measures were detailed, which had been taken to bring to a close the operations connected with the experimental cultivation of cotton.

2. Advertence, however, was not then had to that branch of the operations which contemplated the improvement of the machinery in use for cleaning the cotton.

3. In the letters noted in the margin,† the employment of Mr. Mather, an experienced mechanic, was reported to the Supreme Government. After several attempts on the part of that gentleman to improve the machinery here, a committee of scientific officers at Agra, who examined his machines, recommended that he should be allowed to proceed to Calcutta to superintend their construction at that city, with the superior means and appliances for such works which Calcutta affords.

4. Mr. Mather accordingly proceeded by dawk at the public expense to Calcutta, in October last. He was placed officially under the Mint Master, then Colonel Forbes, who was succeeded by Major Green.

5. Mr. Mather's proceedings in Calcutta were supervised by yourself and also by Mr. Simms, as well as by Major Green. On the official recommendation of the last mentioned officer, the constructions at Fort Gloster of 12 machines at 120 rupees each was sanctioned, being in all 1,440 rupees. It was expected that they would be ready early in the year, so as to be in time to be of service in the manufacture of last year's cotton.

1848	Rs.
7 January	- 1,000
18 February	500
7 April	- 500
	<u>Rs 2,000</u>

6. On the dates noted in the margin, seems to be total amount of 2,000 rupees were advanced to Mr. Mather, but no intelligence has yet been received of the completion or success of the machine. The Lieutenant Governor therefore feels it incumbent on him to bring the subject officially under the notice of the Right Honourable the Governor-general in Council.

7. There can be no doubt of the importance of improving the machinery used for cleaning cotton, and the Honourable the Court of Directors have expressed themselves always in the most favourable terms on this subject. From what the Lieutenant Governor has witnessed here, he is convinced that without some such means of reducing the great cost of cleaning the cotton and separating it from the seed, cotton can never be profitably grown in this country for the British market; still, the construction of these machines has ceased to be an object of peculiar and immediate importance to the Government of these provinces, and the
Lieutenant

* Letter from Mr. F. W. Simms, dated 10 January 1848. Extract ditto, dated 11 February, and Enclosure from Messrs. Munro & Morrison, dated 9th idem. Letter from Mr. Simms, dated 25 February, and Enclosure from Mr. Mather, dated 23d idem.

† Mr. Assistant Secretary Shakespear's letter of 12 June 1847, No. 2517, para. 4. Mr. Secretary Thornton's letter of 29 July (No. 388 A or 3135).

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 371

Lieutenant Governor feels that he is unable at this distance to take on himself the responsibility for the further conduct of the work.

8. In laying these circumstances before the Right Honourable the Governor General in Council, the Lieutenant-governor solicits that measures may be taken in Calcutta for determining the value of Mr. Mather's labours, and the expediency of their further prosecution at the expense of the State.

Agra, 13 July 1848.

I have, &c.
(signed) C. Allen,
Offg. Secy to Govt., N. W. P.

I.
Bengal and
North Western
Provinces.

(No. 650.)

From G. A. Bushby, Esq., Secretary to the Government of India to F. W. Simms, Esq.,
Consulting Engineer.

Sir,

I AM directed to transmit to you the accompanying copy of a letter from the Officiating Secretary to Government of the North Western Provinces, dated the 13th instant, No. 3762, on the subject of the cotton cleaning machines under construction for that Government by Mr. Mather, at Fort Gloster, and to request that you will have the goodness to report, for the information of the Governor-general in Council, and for communication to the Lieutenant Governor North Western Provinces, on the present state of the work and the probable period of its completion, with your sentiments as to the time occupied, the expenditure incurred, and the results arrived at, so as to enable the Government to determine the value of Mr. Mather's labours, and the expediency of their further prosecution at the expense of the State.

Council Chamber, 22 July 1848.

I have, &c.
(signed) G. A. Bushby,
Secy. to the Govt. of India.

To G. A. Bushby, Esq., Secretary to the Government of India, dated Calcutta,
7 August 1848.

Sir,

I HAVE the honour to acknowledge the receipt of your letter (No. 650) of the 22d ultimo, (enclosing copy of a letter, No. 2762, of 13th ultimo, from the Officiating Secretary to the Government of the North Western Provinces), requesting me to report, for the information of the Governor General in Council, upon the cotton-cleaning machines now constructing by Mr. Mather at Fort Gloster Mills; their present state, probable period of completion, and my sentiments as to the time occupied, the expenditure incurred, and the results arrived at. A few days prior to the receipt of the above letter, I had again visited the works, to examine into the progress made subsequently to my last visit; and since then I have looked into the expenditure incurred, and, in obedience to your instructions, submit the following report:—

2. In my letter of 10th January last, after describing the peculiarities of Mr. Mather's machines as then submitted to my inspection, I recommended that a supply of kupas should be sent from Agra, for the purpose of testing the machines fully before they left the workshop, that any alteration suggested by such extended trial might at once be made, thereby affording an opportunity for still further improvements, as experience might suggest. This I deemed desirable, on account of the well known fact that no machinery has ever been made perfect at once, perfection only being arrived at step by step, as experience pointed out the improvements necessary to attain the result. The history of the present cotton-cleaning machine in no way differs from this general rule, for, upon the receipt of the kupas, the machines were subjected to as severe a trial as they would have been if regularly at work, when (after a few days) some defects in their design appeared, and Mr. Mather had to apply his ingenuity afresh to contrive a suitable remedy, which I expect he has succeeded in.

3. The machine, as described in my letters of 16th January and 11th February, performed its work admirably at the time of my visit to Fort Gloster Mills at that time, and so far as I could judge from the short trial I witnessed, bid fair to be quite successful, and, had no disappointment therein occurred, the whole 12 machines would have been speedily completed; but upon the arrival of the kupas from Agra, and the trial named in the last paragraph proceeded with, a certain defect began to show itself, which was not very likely to have been anticipated, even by experienced machinists, being of that kind that is only discoverable from practice. It consisted in a tendency in the machine, after working some time, to allow of some of the cotton seeds passing through the rollers, which was not at all the case during the short trial I had previously witnessed. The rollers, as then constructed, were of the same external dimensions as those of the common native churka of the North Western Provinces, viz., the upper roller of steel, was one-sixteenth of an inch larger in diameter in the centre than at its ends, and the relative proportion of the steel roller to the wooden

L
Bengal and
North Western
Provinces.

one was as one to two. Now, I have no doubt, that at the slow speed at which the native churka is worked by one hand of a man, whilst he feeds the machine with the other hand, this proportion of the rollers answers very well, but when worked at such a greatly increased velocity as Mr. Mather's machine was subjected to, a variation in the size and form of the roller was required to make it reject all the seeds from which it had stripped the cotton.

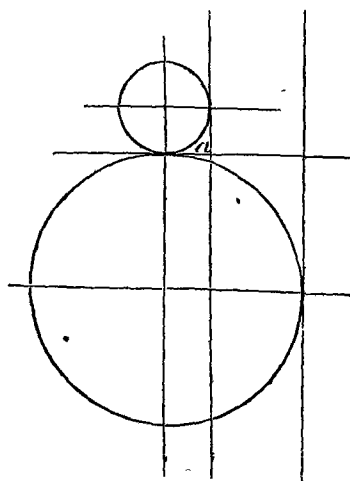
4. A long and tedious series of experiments were next tried by Mr. Mather to ascertain the cause of the above defect, and to supply a proper remedy for the same. Rollers of different sizes and of various relative proportions were applied (both of the wooden and the steel roller), and also the substitution of metal in place of wood for the lower roller. For this purpose cast iron, wrought iron, and brass were tried, but without success. The result of the whole appeared to indicate that the lower roller should have greater strength than those in the native churka, and that it be made as heretofore of wood and the upper one of steel, the latter being turned cylindrical instead of the swell in the centre, and likewise that that the relative proportion be in the ratio of 1 to 3.

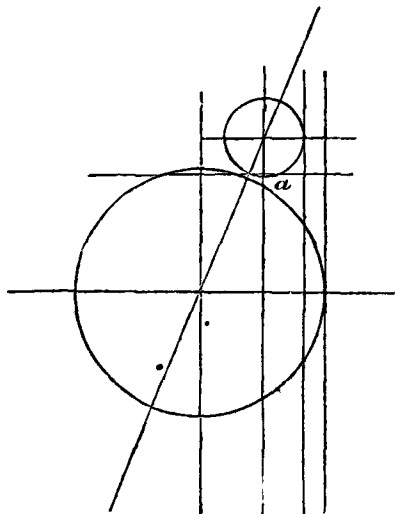
5. Another and important result of these experiments was the discovery that the same sized roller will not suit for cleansing all varieties of cotton. The size of the rollers, therefore, must be determined by the peculiarities of the particular cotton they are intended to clean. The above relative proportions, however, of one to three will most likely hold good in every case. The exact size of the rollers suitable for cleansing the short stapled and small seeded cotton of Agra, as determined by the above-named experiments, are one inch and a half diameter for the wooden (or lower) roller and half an inch diameter for the steel roller; and although the same sized rollers are not suited to all kinds of cotton, the machines themselves are suited to any sized rollers that are at all likely to be required; and therefore rollers of different sizes can easily be placed in the machines, in the event of their being removed from one district to any other, where cotton of a different quality and with different sized seeds is produced.

6. Besides a variation in the size of the rollers the experiments showed that an alteration was requisite in the mode of pressing the upper roller upon the lower. The system of weights at first adopted allowed of too much springing, and therefore recourse has been had to pinching screws. It also appeared that a similar pressure was required in the centre of the steel roller, which has been applied in a similar manner to the pinching screws over the bearings at each end. These and several minor alterations have been made as experience pointed out to be necessary.

7. The result of the trial I witnessed, on my recent visit to Fort Gloster Mills, was certainly satisfactory, although the wet weather was unpropitious for the purpose, the cotton having become damp, which is an unfavourable state to be separated from the seeds in. Nevertheless, the cotton was effectually stripped from the seeds, not one of which passed through the rollers; and the brush from within the case cleaned away the dirt and bits of seed, and at the same time opened out the cotton considerably, which is desirable for the subsequent processes it is subjected to before it reaches the carding machine. But I observed that, after the seeds had been stripped, they adhered to the rollers instead of readily falling into the receptacle prepared for them, the moment the last fragment of the cotton left them. This was attributed, by Messrs. Munro and Morrison, (the master carder and master spinner whom I named in my letter of 11th February, and who were also present on my last visit,) and also by Mr. Mather, to the cotton seeds being damp. If this be the case, nothing of the kind will happen in dry weather, which is stated to be the season when cotton is submitted to the cleaning process.

Whether the damp be the cause or not, it appears to me that the inconvenience may be got rid of by altering the relative positions of the two rollers. At present the upper one is placed vertically over the lower one, as in the annexed diagram. Now the lower roller being so much larger in diameter than the upper one, a considerable shelf, if I may so term it, is found at a , where the two rollers are in contact, and where the machine is fed with cotton. In the process of stripping the seeds they are drawn close into the line of contact of the rollers and there remain, instead of readily falling off as soon as they are cleaned. The damp, I dare say, assists them in clinging to the roller. This they do until they clog the whole line of contact for the entire length of the machine; and although they are easily removed with a piece of stick, yet it is an inconvenience which should be removed if possible. The damp weather has been assigned as the cause; but in this I do not fully concur. It may have much to do with it; but I think that the present position of the rollers has still more so. Now, if the upper roller, instead of being placed





placed vertically, was advanced forward as shown in the annexed diagram, so that a line passing through the centres of the two rollers should form an angle with the vertical of about 22 degrees, the shelf at *a* would be much diminished, and the tendency of the seeds to drop off at once from the roller be greatly increased. Mr. Mather agrees that this alteration is deserving of a trial, but cannot be done with the present machines, as it would involve so great an alteration in the frame as to require new castings, and likewise alterations in so many other parts, as would almost amount to remaking them. Under these circumstances I do not feel warranted in ordering it to be done, and therefore it must stand over for another opportunity. Mr. Mather states that it is absolutely necessary for some portion of a shelf to exist at *a*, to prevent the seeds from falling away before every particle of cotton is cleansed from them, or a loss of material would be the result; and likewise the upper roller must not be brought too far forward, otherwise the radius brush would be in contact with a large portion of the surface of the wooden roller, and thereby

L.
Bengal and
North Western
Provinces.

increase the friction of the machine, which would be decidedly objectionable. He admits that the shelf might be somewhat diminished in the way proposed, without detriment to the other parts of the machine; but states that it would be improper to remove it altogether. In this I agree with him; and consider that the inclination proposed above would answer all purposes, and therefore would recommend its trial upon the next machines that may be made.

8. At the time of my recent visit to Fort Gloster Mills, I had an opportunity of comparing the Agra cotton, after passing through the new churka, with a large quantity of ruhe (or cleaned cotton) purchased by the proprietors of the mills in the Calcutta bazars. I was told it was called Oomrawuttee cotton, grown, I believe, on the banks of the Nurbudda. This material had been so badly prepared for the market, that when it was ready for the carding machine, having passed through the machinery for opening it out and clearing it of dirt, that is, after it had passed twice through the willow and twice through the scuttling machine, and once through the lopping machine, five operations, all of which tend to remove the bits of leaves and other trash the cotton contains, it was by no means to be compared for cleanliness with the Agra cotton which had passed through the new churka only. In addition to making this comparison, I was informed by Messrs. Munro and Morrison that the Bombay cotton, in passing through their first pecking machine (that is, after it had been cleaned for market, in which state it comes to their hands), loses 10 per cent. more than the Agra cotton, after being cleaned by the new churka. To be certain that I had not misunderstood this matter, I have since applied to be furnished with this fact in writing, and I annex hereto a copy of Messrs. Munro and Morrison's letter to me on the subject.

9. Great credit is clearly due to Mr. Mather for his ingenuity and perseverance in contending with the numerous difficulties which have beset his progress. These have consisted very much in the want of the requisite appliances for the work, the lathes and other tools available at Fort Gloster Mills being unsuitable for the construction of small machines, and also in the strong prejudice workmen have to labour at that place, even on an increased rate of wages. Seldom would they remain more than a few days; and the attempt to restrain them by proceedings in the magistrate's court at Howrah proved of no avail, and, after the greatest exertion, the regular services of no more than two fitters could be secured. Under these circumstances, Mr. Mather (to my own knowledge) worked at the machines with his own hands, he having had the advantage of a practical training in his father's workshop at Liverpool. Four of the new machines have been altered as above described, and the remaining eight are undergoing a similar change, and I am assured they will be completed in about two months, provided no further disappointment takes place in respect of securing the services of the requisite workmen.

10. As respects the economy of working this machine, as compared with the native churka, I am unable to report, upon my own knowledge, because I do not know the cost of such work in the district where the cotton is produced; and to make a fair comparison between the new and the old churka, both machines should be worked a given time by the same men, or by men equally skilled in the process. Those people whose business it is to clean cotton, can feed the churka much more rapidly than can be done by a person unaccustomed to, or only partially experienced in the work; and therefore, until the whole 12 machines be fitted up as proposed, and put in motion, either by manual or animal power, as may be resolved upon, and also fed by hands experienced at the use of the old churka, I do not consider that a satisfactory comparative result can be arrived at. Mr. Mather, however, has given me the following particulars upon this part of the subject, which he states that he has confidence in:

296—Sess. 2.

3 A 3

“The

I.
Bengal and
North Western
Provinces.

"The new machine is capable of turning out one maund of clean cotton per diem, at a cost of six annas per maund, the average out-turn of the ordinary machine being eight seers per day, at from 12 annas to one rupee per maund." If this statement be correct, the out-turn by Mr. Mather's machine will be five times as great as that by the native churka, and at a cost of only one-half.

11. The next point to be reported upon, is the time that has been occupied in the work. From Mr. Officiating Secretary Allen's letter, I learn that Mr. Mather was dispatched from Agra to Calcutta upon this business, in the month of October of last year; since which time full nine months have elapsed. The early part of this time must necessarily have been lost in travelling, making preliminary preparations, and securing a place to work in; for it should not be forgotten that there then existed no workshop, belonging to Government, fitted up with suitable tools, to which access could be obtained; and Fort Gloster Mills, with its imperfect appliances, was the only place available. Mr. Mather informs me that he reached Calcutta on the 15th of November, and duly reported his arrival to Lieutenant-colonel Forbes. After this, from a variety of causes over which he had no control, he received no funds from Government for commencing operations until 7th January following; but he had, in the month of December, purchased some tools and materials, and had patterns made, for which he advanced the money himself. Disturbances among the workmen at Fort Gloster then caused some further delay, and it was not until January that the work can be said to have been commenced. The superintendence of Mr. Mather's work came into my hands after the departure of Lieutenant-colonel Forbes for England, in December last, and I can safely state as my belief, that he has since then exerted himself with zeal and energy in the work, and that he has lost no time unnecessarily. I state this possessing a knowledge of his difficulties, and of the lengthy and tedious series of experiments he has instituted, as stated above in the 4th para., which occupied between two and three months. At a first view of the machine any person, unacquainted with the difficulty with which after repeated experiments (in which rollers of from 50 to 66 different forms were tried,) the most efficient proportions of its several parts have been discovered, might be disposed to think that more expedition could have been used in the matter, but that such is not the case is my sincere belief; for I know full well the difficulty of arriving at perfection in all new machinery, and too frequently it has happened that ingenuity and energy, after long exertion, have wholly failed of success. But such a result has not been the case here; for I believe it will be found that Mr. Mather has succeeded in producing a machine of great simplicity of construction, and effective in its operation.

12. The outlay incurred is the next point for consideration. Mr. Allen's letter states that the sum advanced by the Government of the North Western Provinces to Mr. Mather was as follows:

7th January 1848 - - - - -	Rs.	1,000
18th February „ - - - - -		500
7th April „ - - - - -		500
Total - - -	Rs.	2,000

I called upon Mr. Mather for a statement of accounts to the present time, which he immediately furnished. The expenses commenced 24th December 1847, and are brought down in the statements to the 6th ultimo. A copy of this account is annexed hereto, and the following is an abstract thereof:—

	Rs.	a.	p.	Rs.	a.	p.
By materials and tools - - - - -	1,137	-	1			
Wages of workmen - - - - -	1,414	11	8			
Use of lathes, &c., at Fort Gloster - - - - -	362	13	3			
Miscellaneous petty expenses - - - - -	49	3	9			
				2,963	12	9
Messrs. Jessop & Co. for pulleys and shafts to work the machine at Agra				516	-	-
				3,479	12	9
Deduct by cash received from the Sub-treasurer at Fort William, as per Mr. Allen's letter above cited - - - - -				2,000	-	-
Balance due to Mr. Mather on 6th July 1848 - - -	Rs.			1,479	12	9

With the above account Mr. Mather produced vouchers for all the expenditure, except Rs. 86. 8. 0., most of which is for boat hire and miscellaneous expenses, for which no voucher can reasonably be expected. On the annexed copy of Mr. Mather's account I have ticked off with red ink all the items that have been vouched. The work executed by Messrs. Jessop & Co. was ordered by Mr. Mather upon the authority of a letter from Mr. Allen to him, dated 1st November 1847 (which is now before me), in the following words: "You are aware of what machinery there is at this station; whatever may be required in excess for working the 12 machines should be brought up by you." Taking into consideration the nature

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 375

I.
Bengal and
North Western
Provinces.

nature of the work done, and the satisfactory manner in which it has been performed, the expenditure would certainly appear to be justified, and I would beg to recommend that the balance of Rs. 1,479. 12. 9. be paid to Mr. Mather, to whom it would doubtless be acceptable, receiving, as he does, no more than the very small salary of 300 rupees per mensem.

13. By the last para. it appears that, down to July 6th, the expenditure upon the 12 machines (independent of Messrs. Jessop & Co.'s charge, which I consider should not be reckoned into the cost, when speaking simply of the machines) was Rs. 2,963. 12. 9., and Mr. Mather estimates the further expense to complete the work at about 600 rupees, making a total outlay of Rs. 3,563. 12. 9. There are, however, the tools which have been purchased for the work still in existence, and they would be available for future work of the kind, and for such work may be valued at Rs. 303. 4. 0., but if offered for sale would probably not realise more than 150 rupees. Deducting Rs. 303. 4. 0. from the total estimated outlay, would leave Rs. 3,260. 8. 9., and this, divided by the number of the machines, gives for the estimated cost of each Rs. 271. 11. 5. The cost, however, of any similar machines that may hereafter be constructed, Mr. Mather states, and which I have no reason to doubt, will not exceed 60 rupees each, provided that not less than 50 of these are made at the same time, and with better facilities for the work than are afforded at Fort Gloster Mills. This latter condition can very readily be complied with now, by Government allowing the use of the workshops and tools of the Iron Bridge Foundry, in Calcutta, for that purpose, which would answer very well; and they are at the present either out of use, or very nearly so; and this arrangement would likewise get over the difficulty experienced at Fort Gloster in inducing mechanical workmen to stay there.

14. Before closing this report, I hope it will not be thought intrusive in me, at the request of Mr. Mather, respectfully to solicit the attention of Government to his present position. He states that he has been in the service of Government for 13 months, at the low salary of 300 rupees per mensem, and that he was induced to take this employment last year when he wanted to get away from Calcutta on account of ill health; that he only did so on the express understanding that, if successful, he was to be better paid. In confirmation of this, he has sent me the following extract from his letter accepting the appointment to Mr. H. H. Bell, then Government cotton agent at Agra, dated Calcutta, 19th April 1847: "These terms are scarcely higher than what I have formerly paid to English working mechanics in my employ in this country, and what is given to working engineers in the steamers in Calcutta; but I am induced to accept them, as your letter leads me to expect that, in case of success attending the experiments, I may hereafter look for an increase of salary." Besides having had a liberal education, Mr. Mather was trained to the business of a mechanist at his father's works at Liverpool, which, previous to its stopping, was one of our large engineering establishments, carrying on business under the name of Mather, Dixon & Co. He subsequently was employed in the locomotive departments of several of our railways, and, previously to his visiting Calcutta, was at Ceylon, and in the Madras Presidency, erecting mill-work, presses, and the like machinery. He came to Calcutta with the hope of finding an opening to engage in business on his own account, thinking that the then expected introduction of railways would occasion much business in his line. In this he has been disappointed. He lastly undertook the contriving and constructing his present cotton machines, as above stated, and has evinced therein much talent, ingenuity and perseverance. It is due to him also to observe, that whatever may be the ultimate value of his invention to the cotton trade of India, he has given the country the full benefit thereof without reserve, and he can never expect to reap any pecuniary advantages from the manufacture of these machines, on account of the low price at which they must be sold to ensure their general adoption in the country; and certainly his present salary cannot be considered an equivalent for such services. Therefore, whether the Government should resolve to proceed further with the construction of these machines, to distribute in various cotton districts, or should be pleased to let the subject rest where it is, I would in either case most respectfully recommend Mr. Mather to its favourable consideration.

15. Annexed to this report, in addition to the statement of accounts furnished by Mr. Mather, are copies of letters from Messrs. Munro and Morrison, the master spinner and master carder at Fort Gloster Mills, addressed to myself, respecting the cotton machines in question. I attach considerable weight to their opinions, from their known experience in such matters. I have also added copies of my former letters to you on this subject, which, being intended for the information of the Government of the North Western Provinces, were not, I believe, placed on record in your office, and, as they are referred to in this report, may be required for reference.

I have, &c.
(signed) F. W. Simms, Civil Engineer.

I.
Bengal and
North Western
Provinces.

Enclosure.

CONTINGENT BILL for Cotton Cleaning Machines constructed for the Government, North Western Provinces.

DATE.		Rs. a. p.
1847:		
24 December	To 1 teak plank for pattern maker, 14 ft. by 1 ft. 2 in. - -	3 11 6
24 "	- 2 bars of iron, weighing seers 38. 8, and cooly hire - -	5 5 9
27 "	- 5 bars $\frac{3}{8}$ round iron, weighing mds. 1. 0. 8, at Rs. 4. 4. 2. per maund - - - -	4 4 9
27 "	- 4 bars $\frac{3}{4}$ Swedish iron, mds. 1. 37. 0, at Rs. 5. 4. per maund - -	10 1 9
27 "	- 2 bars $1\frac{1}{4}$ Swedish iron " 2. 2. 8, at Rs. 4. 14. per " - -	10 - 9
27 "	- 4 sheets iron, $\frac{1}{16}$ thick " 1. 23. 6, at Rs. 8. 4. per " - -	12 15 9
27 "	- 1 tool chest - - - - -	2 - -
27 "	- 7 vices - - - - - mds. 80. 12. -	- - -
27 "	- 1 wrench - - - - - " 2. - - -	86 10 -
27 "	- 1 hand vice - - - - - " - 8. - -	- - -
27 "	- 6 hammers - - - - - " 3. 6. -	- - -
28 "	- Coolie and cart hire - - - - -	- 13 -
29 "	- Dinghy and coolie hire to Fort Gloster - - - - -	1 - -
29 "	- Gocul Chunder Dam, for screws, &c., as per bill (1) - -	3 8 -
29 "	- Smith's coal, 20 maunds, as per bill (2) - - - - -	15 - -
29 "	- 1 sheet copper, seers 2. 13, at Rs. 1. 4. per seer - - -	3 8 3
29 "	- Dinghy and coolie hire for coals and sundries to Fort Gloster - -	2 - -
29 "	- D. Razaris, for pencils and paper, as per bill (3) - -	6 1 -
29 "	- Fort Gloster Company's bill for casting, use of lathes, &c. (4) - -	27 13 3
1848:		
4 January	- Cash paid advance to Loknat Ghose Turner, as per receipt (5) - - - - -	9 - -
4 "	- Cash paid for boat hire, and Mistry engaging workmen at Calcutta - - - - -	6 - -
5 "	- Boat hire - - - - -	1 - -
5 "	- Cash paid advance to Kalidoss Viceman, as per receipt (6) - -	2 - -
10 "	- Cash paid advance to Holledol Smith, as per receipt (7) - -	2 - -
11 "	- Boat hire - - - - -	2 - -
12 "	- Durwan to Calcutta, and coolie hire - - - - -	- 10 -
18 "	- T. Anthony, as per receipt (8) - - - - -	100 - -
20 "	- J. E. Thomson for tools and steel, as per bill (9) - - - -	78 12 -
31 "	- Workmen's wages for December and January, as per pay sheet A. - - - - -	76 11 8
4 February	- Thomas Wilson, as per bill (10) - - - - -	60 - -
18 "	- Thomas Wilson, as per bill (11) - - - - -	140 - -
19 "	- Sircar's bill for coolie hire (12) - - - - -	2 3 -
23 "	- Thomas Wilson, as per bill (13) - - - - -	70 - 8 -
29 "	- Workmen's wages for February, as per pay sheet B. - - -	104 2 -
1 March	- Boat hire for workmen to and from Calcutta - - - - -	2 14 -
1 "	- House rent for workmen at Fort Gloster - - - - -	2 - -
1 "	- Sircar and Durwan's batta to Calcutta - - - - -	1 - -
1 "	- Coolies for landing coal - - - - -	- 2 6
1 "	- Hard wood - - - - -	4 - -
23 "	- Issur Chunder Dutt, as per bill (14) - - - - -	98 3 3
23 "	- W. Mabou - - - - -	150 - -
31 "	- Workmen's wages for March, as per pay sheet C. - - - -	111 14 9
5 April	- Iron wire 29 lbs., as per bill (15) - - - - -	5 7 -
8 "	- 20 pices of tin, as per bill (16) - - - - -	12 10 3
27 "	- Brushes for machines, as per bill (17) - - - - -	20 - -
30 "	- Fort Gloster Company's bill for castings, use of lathes, &c. &c. (18) - - - - -	776 3 10
30 "	- Thomas Wilson - - - - -	11 - -
30 "	- Workmen's wages for April, as per pay sheet D. - - - -	77 12 2
17 May	- R. W. Watkins, as per receipt (19) - - - - -	150 - -
17 "	- Freight on wood for churka rollers from Agra (20) - - -	3 - -
31 "	- T. Reeves for lignum vitæ wood. - - - - -	14 11 6
31 "	- Workmen's wages for May, as per pay sheet E. - - - -	85 1 6
28 June	- R. W. Watkins, as per receipt (22) - - - - -	150 - -
30 "	- Workmen's wages for June, as per pay sheet F. - - - -	94 11 9
6 "	- E. Thomson's bill for tools and materials (23) - - - -	297 14 -
6 "	- Obhoy Churren Sing, as per bill (24) - - - - -	50 6 3
TOTAL - - - Co.'s Rs.		2,963 12 9

E. E.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 377

I.
Bengal and
North Western
Provinces.

MEMORANDUM.

		<i>Rs.</i>	<i>a.</i>	<i>p.</i>
To expenditure incurred in the manufacture of 12 new churkas, and in a series of experiments connected therewith, as per account - - - - -		2,963	12	9
Add to this, cost of pulleys and shafting (ordered in accordance with the instructions contained in 5th para. Mr. Allen's letter to Mr. Mather, dated Agra, 1st November 1847, for working the machines by one power at Agra), as per Messrs. Jessop & Co.'s bill - - - - -		516	-	-
		<i>Co.'s Rs.</i> 3,479 12 9		
Deduct by cash received from the Sub-Treasurer, Fort William:				
1848.				
	<i>Rs.</i>	<i>a.</i>	<i>p.</i>	
7 January - - - - -	1,000	-	-	} - - - 2,000 - -
18 February - - - - -	500	-	-	
7 April - - - - -	500	-	-	
	Balance - - -	<i>Co.'s Rs.</i>		1,479 12 9

E. E.

(signed) J. Mather.

(True copy.)

(signed) B. Coomar.

(No. 742.)

From G. A. Bushby, Esq., Secretary to the Government of India, to G. Udny, Esq., Sub-Treasurer.

Home Cons., 19
Aug. 1848, No. 35.

Sir,

UNDER the authority of the Governor-general in Council, I have the honour to request that you will advance, on the receipt of Mr. J. H. Mather, civil engineer, employed in constructing, experimentally, certain cotton-cleaning machines for the Government of the North Western Provinces, such sums of money as he may from time to time require, not exceeding in the aggregate 600 (six hundred) rupees. Home Department.

I have, &c.

(signed) G. A. Bushby,
Secretary to the Government of India.

Council Chamber,
19 August 1848.

(No. 741.)

From G. A. Bushby, Esq., Secretary to the Government of India, to Accountant to the Government of Bengal.

Cons., 19 Aug. 1848,
No. 36.

Sir,

I AM directed to acquaint you, that a treasury order for Rs. 1,479. 12. 9. has been this day granted in favour of Mr. J. H. Mather, and that the sub-treasurer has been instructed to advance Mr. Mather a further sum, not exceeding 600 rupees, in such proportions as he may from time to time require, for the completion of his cotton-cleaning machines. Home Department.

2. The above sums are to be debited to the Government of the North Western Provinces.

I have, &c.

(signed) G. A. Bushby,
Secretary to the Government of India.

Council Chamber,
19 August 1848.

I.
Bengal and
North Western
Provinces.

(No. 733.)

From *G. A. Bushby*, Secretary to the Government of India, to the Military Board.

Cons., 19 Aug. 1848,
No. 37.

Home Department.

Gentlemen,

THE Governor-general having authorised Mr. J. H. Mather, employed at Fort Gloster in constructing certain cotton-cleaning machines for the Government of the North Western Provinces, to remove his work to the Iron Bridge Manufactory, I am directed to request that your Board will have the goodness to issue the necessary orders to the Superintendent of the manufactory, to insure to Mr. Mather the benefit of the workshop and tools of the yard, as well as every facility in the completion of his work.

I have, &c.

(signed) *G. A. Bushby*,
Secretary to the Government of India.

Council Chamber,
19 August 1848.

(No. 634.)

Cons., 19 Aug. 1848,
No. 38.

Home Department.

* Dated 7th inst.

Sir,

THE Governor-general in Council having had under consideration a report* from Mr. F. W. Simms on the cotton-cleaning machines under construction by you for the Government of the North Western Provinces, has determined that the experiment shall be carried to a conclusion, and has sanctioned the completion of the 12 machines now in hand.

2. You are authorised to remove your work to the Iron Bridge Manufactory, and the necessary orders will be issued to the Superintendent to insure you the benefit of the workshop and tools of that yard, as well as every facility in the completion of your work.

3. I have the honour to enclose a treasury order for Rs. 1,479. 12. 9., balance of the expenses incurred by you up to the 6th ultimo, and to acquaint you that the sub-treasurer has been instructed to advance, on your receipt, a further sum not exceeding 600 rupees, in such proportions as you may require from time to time for the completion of your work; but it is hoped that the expenditure may possibly prove to be less, from the facilities which will be afforded to you by the transfer of your work to the Iron Bridge Yard.

I have, &c.

(signed) *G. A. Bushby*,
Secretary to the Government of India.

Fort William,
19 August 1848.

(No. 736.)

Cons., 19 Aug. 1848,
No. 39.

Home Department.

Sir,

THE Governor-general in Council having had before him your report, dated the 7th instant, on the cotton-cleaning machines under construction by Mr. Mather, at Fort Gloster, for the Government of the North Western Provinces, has determined that the experiment shall be carried to a conclusion, and has sanctioned the completion of the 12 machines now in hand. Mr. Mather has been instructed to remove his work to the Iron Bridge Manufactory, where he will have the benefit of the workshop and tools of that yard, and be able to command more regularity of attendance on the part of workmen.

2. In compliance with your recommendation, his Lordship in Council has authorised the payment to Mr. Mather of Rs. 1,479. 12. 9., the balance of the expenses incurred by him up to the 6th ultimo. A further sum of 600 rupees has been placed at his credit for the completion of the work; but the expense it is hoped may prove to be less, with the advantage he will now have at the yard and workshop of the Iron Bridge Manufactory.

I have, &c.

(signed) *G. A. Bushby*,
Secretary to the Government of India.

Fort William,
19 August 1848.

TO. PROMOTE THE CULTIVATION OF COTTON IN INDIA. 379

(No. 639.)

From *G. A. Bushby*, Esq., Secretary to the Government of India, to *C. Allen*, Esq.,
Officiating Secretary to Government, North Western Provinces.

Sir,

WITH reference to your letter, No. 3762, of the 13th ultimo, respecting the cotton-cleaning machines under construction by Mr. Mather, at Fort Gloster, for the Government of the North Western Provinces, I am directed to transmit, for the information of the Honourable the Lieutenant-governor, the accompanying copy of a correspondence with Mr. Simms, together with a copy of my note on the subject.

2. The Governor-general in Council, having had the above papers before him, is willing that the experiment should now be carried to a conclusion, and has sanctioned the completion of the 12 machines in hand. Mr. Mather has been authorised to remove his work to the Iron Bridge Manufactory, where he will have the benefit of the workshop and tools of that yard, and be able to command more regularity of attendance on the part of workmen.

3. His Lordship in Council has authorised the payment to Mr. Mather of Rs. 1,479. 12. 9., the balance of the expenses incurred by him up to the 6th ultimo, and a credit has been given him for a further sum of 600 rupees, for the completion of the work; but the expenditure may, it is hoped, be less, with the advantage he will now have at the yard and workshop of the Iron Bridge Manufactory.

I have, &c.

(signed) *G. A. Bushby*,
Secretary to the Government of India.

Fort William, 19 August 1848.

I.
Bengal and
North Western
Provinces.

Cons., 19 Aug. 1848,
No. 40.

Home Department.

To Mr. Simms,
dated 22 ultimo.
From ditto, dated
7th inst.

(No. 1725 of 1848.)

From *C. J. Erskine*, Esq., Deputy Secretary to the Government of Bombay, to *G. A. Bushby*,
Esq., Secretary to the Government of India.

Sir,

WITH reference to your letter, No. 231, dated the 4th instant, I have been desired to request that you will have the goodness to convey to the Right honourable the Governor-general of India in Council, the wish of the Honourable the Governor in Council to be supplied with 10 of the cotton-cleaning machines invented by Mr. Mather, in order that the opinions of the local officers of this Government may be obtained as to their utility.

I have, &c.

(signed) *C. J. Erskine*,
Deputy Secretary to Government.

Bombay Castle, 25 March 1848.

(No. 394.)

From *Sir H. C. Montgomery*, Bart., Secretary to the Government of Fort St. George, to
G. A. Bushby, Esq., Secretary to the Government of India.

Sir,

I AM directed to acknowledge the receipt of your letter, dated 4th March 1848, No. 230, and in conveying the thanks of the Right honourable the Governor in Council for the papers therewith received, respecting the new cotton-cleaning machine, or "improved churka," invented by Mr. Mather, to communicate at the same time the request of this Government to be supplied with two of the machines, to enable the officers engaged in the experimental cotton farms at this Presidency to form a practical opinion as to its merits, and with the view of procuring others hereafter, should that opinion warrant such a proceeding.

I have, &c.

(signed) *H. C. Montgomery*,
Secretary to Government.

Fort St. George, 17 April 1848.

From *J. H. Mather*, Esq., Civil Engineer, Superintending Government Cotton Experiments, to *G. A. Bushby*, Esq., Secretary to the Government of India.

Sir,

I HAVE the honour to request that you will bring the following statement to the notice of the Right Honourable the Governor-general in Council.

I.
Bengal and
North Western
Provinces.

2. On the 1st July 1848, I entered the service of the Government of the North Western Provinces, having been engaged for the purpose of superintending the introduction of an improved system of cleaning cotton by machinery in the North Western Provinces. I had previously been for three years employed in the erection and superintendence of cotton machinery, for private parties, in the Tinnevelly district of the Madras Presidency, and had there, after numerous attempts to introduce the "American Saw-gin," found that it was quite inapplicable to the shorter descriptions of East Indian cotton, and that a machine on the principle of the East Indian churka was the only one which could be used without injury to the staple. I accordingly made a rough model of an improved churka, and on forming my engagement with the Government, North Western Provinces, I proposed to carry out my improvements still further: my plans, &c. were accordingly submitted to a committee of scientific officers, at Agra, who recommended the Lieutenant-governor to authorise me to proceed to Calcutta for the purpose of making up 12 of my new machines at one of the public workshops.

3. My salary was fixed in the first instance at 300 rupees per month, and I was induced to accept this amount (which was very considerably less than I had formerly realised either in England or in Tinnevelly), on the strength of the understanding that if my plans were successful, I was to receive a suitable salary, and because I was assured by letters from my friends among the Cotton brokers and spinners of Liverpool and Manchester, that, owing to the great interest manifested on the subject of East Indian, by the Honourable the Court of Directors, I might depend on the warm support of the Government of India if my machines were successful.

4. I need not here detail my proceedings since my arrival in Calcutta from Agra, as they have repeatedly been under your immediate notice, and have moreover been lately reported on to Government by Mr. F. W. Simms, consulting engineer to the Government of India: my present object is to bring to the notice of Government, that since my arrival in Calcutta the Government cotton experiments in the North Western Provinces have been discontinued altogether, under special orders from the Honourable the Court of Directors, and that the late agent has written to inform me that my services (on the completion of the 12 machines now ready) will consequently not be required by the Government of the North Western Provinces, and that the Lieutenant-governor has expressed* a desire to transfer the further conduct of the work to the supreme Government.

* See Mr. Officiating Secretary Allen's letter to Mr. Secretary Bushby, dated Agra, 13 July 1848, para. 7.

5. The cause of the discontinuance of the Government cotton cultivation North Western Provinces, is because the English spinners have most decidedly declared that the staple of the cotton grown near Agra is quite unsuited to the English market, and my own private letters from Manchester confirm this assertion; as, however, it is well known that decidedly better descriptions of cotton are grown on the banks of the Nerbudda, at Omrawuttee, Broach, Dharwar, Coimbatore, Tinnevelly, &c. of the staple of which the English spinners report most favourably, and only complain of the inefficient manner in which such cotton is cleaned, and the consequent dirty state in which it reaches them; I am now especially desirous (should it meet with the sanction of the Right Honourable the Governor-general in Council) that sets of the new machines should at once be set to work in some of the above districts, with the view of demonstrating to the natives of the district, the fact that cotton cleaned by these machines will realise a better price than similar cotton cleaned in the ordinary manner, for it cannot be expected that the new machine will be adopted in India before this fact is most clearly and satisfactorily established in every cotton district.

6. The cotton cleaned by the new machine has already been reported on by practical men, brokers and spinners, as worth at least one rupee and a half (*Rs. 1½*) per maund more in the Calcutta market than similar cotton cleaned by the native churka.

7. Having heard from you that the Madras Government have expressed a desire to have a set of these machines sent to that Presidency, and having also been informed that the Commissioner of Dacca and the Governor-general's agent

agent in Assam, have both expressed similar desires; being also convinced that the machine cannot receive a fair trial at Agra, the cotton of which district the Manchester spinners will not use; and as the machines can just now be made up at a very reduced cost, on account of the tools, native workmen, &c., &c., hitherto employed, being still available; I would respectfully suggest that eight (8) sets of the new machines be made up at the Government iron bridge yard, Calcutta, under my superintendence and the general supervision of Mr. Simms, and that they be distributed among the best cotton-growing districts.

8. Though the machine fully answers my expectations, it is of course, like all new machinery, susceptible of such improvements as experience and practice alone can suggest, and I should therefore confidently expect, in making up more machines, to introduce some such improvements.

9. In conclusion, I would most respectfully solicit the attention of Government to the subject of my salary, which, as before stated, I was satisfied with so long as the success of my machine remained doubtful; but now that, after 14 months' continued experiments, I have, notwithstanding many difficulties, demonstrated to the satisfaction of the Government Engineer, Mr. Simms, the Calcutta merchants, and the European spinners, the success and efficiency of my new machine, I feel that I may reasonably request an increase of remuneration, my present salary being less than one-half of the salaries ordinarily paid to engineers of my own standing in India.

I have, &c.

Calcutta, 28 Sept. 1848.

(signed) *J. H. Mather,*
C. E. Supg. Govt. Cotton Experiments.

MINUTE by the Right Honourable the Governor-General of India.

I HAVE seen Mr. Mather's machines, and, so far as one can judge from merely experimental working, they seem calculated to effect their object, and are certainly much superior to any which I saw placed in competition with them. Cotton cleaners.

It is of the utmost importance to the interests of India to hold out every possible encouragement to the introduction of improvements in the cleaning, conveyance, and management of cotton grown in India.

I am of opinion, therefore, that the Government should grant to Mr. Mather a salary of 400 rupees a month while he is employed.

The Government of Madras and Bombay should be requested to give full opportunity for the trial of these machines in the cotton districts within their respective limits.

At Dacca the cotton cultivation is in too discouraging a state to make it desirable to send a set of machines there at present.

In Assam, perhaps, there is a better opening; but at all events I would propose only to sanction his preparing machines with the means at his disposal, and to commission such numbers afterwards as the Government may desire to have, or be able to employ.

(signed) *Dalhousie.*

10 October 1848.

(No. 811.)

From *G. A. Bushby, Esq.,* Secretary to the Government of India, Home Department, to
J. H. Mather, Esq.

Sir,

I AM directed to inform you that the Right honourable the Governor-general has noticed favourably the experimental working of your cotton-cleaning machine, as compared with those placed in competition with it, and that it has been resolved to authorise the construction at the Iron Bridge Manufactory of a few more sets of the machine, in order that their utility may be practically tested in the cotton-growing districts under the several Presidencies.

2. Instead of making up at once eight sets, as suggested in the 7th para. of your letter, the President in Council is of opinion that it will be preferable to begin with the construction
296—Sess. 2. 3 B 3

I.
Bengal and
North Western
Provinces.

tion of only so many as you can readily undertake with the means at your disposal, and within the estimated cost.

3. In consideration of the circumstances represented in your letter of the 28th ultimo, and by Mr. Simms in his report, dated the 7th August last, the Honourable the President in Council, with the concurrence of the Right Honourable the Governor-general, is pleased to sanction your drawing while you may be employed upon this work a salary of 400 rupees a month, commencing from the present date, up to which time you will continue to draw your allowance from the Agra Government.

4. You will continue to carry on your work under the supervision of Mr. Simms, who will in future be the channel of your communications with the Government.

I have, &c.

(signed) G. A. Bushby,
Secretary to the Government of India.

Council Chamber,
21 October 1848.

(No. 814.)

From G. A. Bushby, Esq., Secretary to the Government of India, Home Department, to C. Allen, Esq., Officiating Secretary to Government of the North Western Provinces.

Sir,

IN continuation of my letter, No. 639, dated the 19th August last, I am directed to acquaint you, for the information of the Honourable the Lieutenant-governor, that the Right Honourable the Governor-general, after witnessing the experimental working of one of the cotton-cleaning machines invented by Mr. Mather, having come to the opinion that, so far as his Lordship could judge, it seemed calculated to effect its object, and was certainly much superior to any which he saw placed in competition with it, the President in Council, with the concurrence of his Lordship, has sanctioned the construction of a few more sets for the purpose of their being distributed for trial among the cotton-growing districts under the several Presidencies, and has granted Mr. Mather, while he may be employed upon this work, a salary of 400 rupees per mensem, commencing from the present date, up to which time he will continue to draw his allowance from the Agra Government.

2. Inquiry has been made as to the date by which the twelve machines intended for the North Western Provinces are likely to be ready for dispatch to Agra, and you will hereafter be apprised on that point.

I have, &c.

(signed) G. A. Bushby,
Secretary to the Government of India.

Fort William,
21 October 1848.

From G. A. Bushby, Esq., Secretary to the Government of India, Home Department, to Secretary to Government of Bombay (No. 813); Fort St. George (No. 812.)

Sir,

MR. MATHER'S cotton-cleaning machine having been tested, and found to answer its purpose very well, so far as it was possible to judge from a merely experimental working. I am directed to acquaint you, that he has been instructed to construct a few more, and that ten* of these machines, as soon as completed, will be forwarded to Bombay, in compliance with the application contained in Mr. Deputy Secretary Erskine's letter, No. 1725, dated the 25th March last.

* two. † Madras.
‡ your letter, No.
394, dated the 17th
April last.

I have, &c.

(signed) G. A. Bushby,
Secretary to the Government of India.

Fort William, 21 October 1848.

(No. 927.)

From G. A. Bushby, Esq., Secretary to the Government of India, Home Department, to J. P. Grant, Esq., Officiating Secretary to the Government of Bengal.

Sir,

IN continuation of my letter, No. 278, dated the 4th March last, I am directed to acquaint you, that the Right Honourable the Governor-general, after witnessing the experimental working of one of the cotton-cleaning machines invented by Mr. Mather, having come to an opinion that, so far as his Lordship could judge, it seemed well calculated to effect its object, and is certainly much superior to any which he saw placed in competition with it, the President in Council, with the concurrence of his Lordship, has sanctioned the construction of

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 383

of a few more sets, for the purpose of their being distributed for trial among the cotton growing districts, under the several presidencies; you are accordingly requested to state how many sets of machines will be required for the above purpose in Bengal.

I.
Bengal and
North Western
Provinces.

I have, &c.
(signed) *G. A. Bushby*,
Secretary to the Government of India.

Council Chamber, 21 October 1848.

(No. 925.)

From *G. A. Bushby*, Esq., Secretary to the Government of India, Home Department,
to the Military Board.

Gentlemen,

IN continuation of my letter, No. 733, dated the 19th August last, I am directed to acquaint you, that Mr. Mather has been authorised to continue at the Iron Bridge Yard the construction of his new cotton-cleaning machines, and to request that your Board will have the goodness to issue the necessary orders to insure him every facility in the prosecution of his work.

I have, &c.
(signed) *G. A. Bushby*,
Secretary to the Government of India.

Council Chamber, 21 October 1848.

(No. 926.)

From *G. A. Bushby*, Esq., Secretary to the Government of India, Home Department,
to *F. W. Simms*, Esq., Consulting Engineer to the Government of India.

Sir,

I AM directed to acquaint you that the Right Honourable the Governor-general having been favourably impressed by the experimental working of Mr. Mather's cotton-cleaning machine, as compared with those placed in competition with it, that gentleman has been authorised to construct, at the Iron Bridge Yard, a few more sets, in order that their utility be practically tested in the cotton-growing districts under the several Presidencies.

2. Mr. Mather suggested the construction of eight sets of the new machine, but has been informed that the President in Council considers it preferable that he should begin with only so many as he can readily undertake, with the means at his disposal, and at the estimated cost.

3. The Governments of Fort St. George and Bombay have applied, the former for two and the latter for ten of the machines, and others may hereafter be required. Mr. Mather therefore is to continue with his work till otherwise instructed, and I am directed to request that you will have the goodness to require from him a quarterly progress report, in order that Government may be kept apprised of the progress he is making.

4. The President in Council is desirous of being informed when the 12 machines, intended for the North Western Provinces, are likely to be ready for dispatch, as also the probable period by which, with the appliances Mr. Mather now possesses, and the facilities which he will command at the Iron Bridge Manufactory, he can complete eight more sets.

5. Under the recommendation contained in the 14th para. of your letter, dated the 7th August last, and in consideration of the circumstances represented by Mr. Mather in his letter, dated the 28th ultimo, the President in Council, with the concurrence of the Right Honourable the Governor-general, has been pleased to authorise Mr. Mather, while he may be employed upon this work, to draw a salary of 400 rupees per mensem, commencing from the present date, up to which time he will continue to draw his allowance from the Agra Government.

6. Mr. Mather has been instructed that he is to carry on his work under your supervision, and that you will be the channel of his communication with the Government.

I have, &c.
(signed) *G. A. Bushby*,
Secretary to the Government of India.

Fort William, 21 October 1848.

1.
Bengal and
North Western
Provinces.

Further proceed-
ings regarding the
construction of
cotton-cleaning
machines by
Mr. Mather.

EXTRACT from a Despatch from the Government of India to the Honourable the Court of Directors in the Home Department, dated 28 July 1849, No. 23.

15. IN continuation of letter No. 56 of 1848, dated 21st October, we have the honour to report the further proceedings regarding the construction of cotton-cleaning machines by Mr. Mather.* Twelve of the machines have been forwarded to Agra, and Mr. Mather has been authorised to construct eight more.

16. We passed a bill, amounting to 550 rupees, for boat-hire incurred by Mr. Mather while carrying on the construction of the machines in the Fort Gloster Mills; and orders have been issued to pay Mr. Mather any sums he may require from time to time, not exceeding in the aggregate 2,000 rupees.

EXTRACT from the Proceedings of the Honourable the President of the Council of India in Council, in the Home Department, under date 4 November 1848.

No. 60.

From *J. H. Mather*, Esq., Civil Engineer, Superintending Government Cotton Experiments, to *G. A. Bushby*, Esq., Secretary to the Government of India.

Sir,

I HAVE the honour to request that you will bring to the notice of Government the subject of my expenditure, 550 Co.'s rupees, for boat-hire while carrying on the construction of cotton-cleaning machines for Government at Fort Gloster.

2. You are already aware that my original instructions directed me to construct the machines in question at the Mint workshops in Calcutta, but that, after the departure of Lieut.-Col. Forbes for England, I was instructed to carry out the work at the Fort Gloster Mills. The local position of the mills rendered it absolutely necessary for me to employ a boat for the due execution of my work.

3. The charge for boat-hire was accidentally left out in the accounts furnished by me up to 6th July last, which were forwarded to you through Mr. Simms, and I have now to request that you will submit the matter for the consideration of Government, with the view of my receiving compensation for the above-named expenditure.

4. I may further mention that my salary has not been sufficient to cover the extra expense incurred in consequence of the removal of the work to Fort Gloster, and that I have been obliged to meet the same from other sources.

I have, &c.

(signed) *J. H. Mather*, C.E.,

1, Hastings-street, Calcutta,
28 October 1848.

Superintending Government Cotton Experiments.

No. 65.

(No. 983.)

From *G. A. Bushby*, Esq., Secretary to the Government of India, Home Department, to *F. W. Simms*, Esq., Consulting Engineer to the Government of India.

Sir,

Home Department.

I AM directed to request that you will apprise Mr. Mather that in compliance with his application, dated the 27th ultimo, the Honourable the President in Council has been pleased to sanction the disbursement of 550 Co.'s rupees on account of boat-hire incurred by him whilst carrying on the construction of the cotton-cleaning machines for the Government of the North Western Provinces at Fort Gloster, and which was omitted to be included in the accounts furnished by him to the 6th July last.

2. The Sub-Treasurer has been instructed to disburse the above amount on Mr. Mather's bill, duly audited.

I have, &c.

(signed) *G. A. Bushby*,

Council Chamber, 4 November 1848.

Secretary to the Government of India.

* Home Cons., 4th November 1848, No. 60 to 65; 25th November 1848, No. 45 to 52; 16th December 1848, No. 31 to 48; 23d December 1848, No. 15 and 16; 27th January 1849, No. 14; 24th February 1849, No. 29 to 35; 24th February 1849, No. 44 and 45; 24th March 1849, No. 34 and 35.

† One boat and crew for ten months, at 55 rupees; Co.'s Rs. 550.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 385

EXTRACT from the Proceedings of the Honourable the President of the Council of India in Council, in the Home Department, under date the 25th November 1848.

I.
Bengal and
North Western
Provinces.

From *J. H. Mather, Esq.*, Civil Engineer, Superintending Government Cotton Experiments, to *G. A. Bushby, Esq.*, Secretary to the Government of India.

No. 45.

Sir,

I HAVE the honour to acknowledge the receipt of your letter (No. 811) of the 21st. ultimo, in which you inform me of the intention of Government to sanction the experimental construction of cotton-cleaning machines, and of the terms on which my services are engaged for that purpose. Home Department.

2. According to the instructions contained in the 4th para. of your letter under acknowledgment, I have addressed a letter to Mr. Simms regarding the number of machines to be constructed, and the appliances required for their construction.

I have, &c.

(signed) *J. H. Mather, c.e.*

1, Hastings-street, Calcutta,
11 November 1848.

Superintending Government Cotton Experiments.

From *F. W. Simms, Esq.*, Civil Engineer, to *F. J. Halliday, Esq.*, Officiating Secretary to the Government of India.

No. 46.

Sir,

IN accordance with the instructions of Mr. Secretary Bushby in a letter, No. 926, of the 21st ultimo, I have the honour to inform you Mr. Mather reports that the 12 cotton-cleaning machines constructed by him for the Government of the North Western Provinces will be ready for dispatch by the next Government steamer to Allahabad. And with regard to the time which the construction of eight sets of cotton-cleansing machines will probably occupy at the Iron Bridge manufactory, he states that after a commencement is made and the workmen become properly acquainted with the nature of the work, he expects to turn out the machines at the rate of one set every six weeks.

2. I have annexed a copy of a letter from Mr. Mather, dated 11th November, wherein he states the number of the machines to be made up at one time, in order to keep within the estimate of sixty rupees each, should not be less than eight sets, as proposed in his letter to Mr. Secretary Bushby, of 28th September last, which proposition he still adheres to as necessary to avoid exceeding the estimate; it will therefore be desirable to have the pleasure of his Honour the President in Council upon this point.

3. Likewise in the above-named letter, para. 3, he says that some tools, in addition to those now in his possession, and those available at the Iron Bridge Yard, will be required, the probable cost of which will be 300 rupees, which will form part of the estimated cost of 60 rupees each machine. Under these circumstances I consider there would be no impropriety in authorising such expenditure, but upon this point also I should wish to be instructed. These tools might probably be obtainable from the Government stores in the arsenal.

4. Mr. Mather also remarks that the turning lathes and machinery in the yard will require some repairs before he can commence work, which will occupy him two or three weeks after he enters the yard; and lastly, he requires to know whether the stores now in the yard, as coke, coal, iron, timber, &c., can be made available for his work, and also when he can enter upon the premises.

5. In consequence of receiving the above-named letter I visited the iron yard with him, and I found it to be true that the lathes are very much out of order, and only one of them in a suitable state for Mr. Mather's work; there is, however, a second one, which he might put in order at no great cost. These two are all that can be made available for the work, and as he would most likely require more lathes, arrangements might be made to borrow one or two small ones from the gun foundry at Cossipore, if they have any such, and also if they can be spared.

6. It is not only desirable that Mr. Mather be authorised to enter upon the yard without delay to commence upon his work, but it is also important that his exact position in that yard be defined, for I find that work of various kinds is now being carried on there. I am not aware who is at present in charge of the yard, and responsible for the safety of the Government property, but was informed that the person lately in charge was a Mr. Harvey, now of the Mint. If, therefore, there exists a vacancy in that office, I would suggest the appointing of Mr. Mather thereto, as I think it would be very undesirable to have two head

Bengal and
North Western
Provinces.

men on the premises, the one in charge of the yard and stores, and Mr. Mather making his machines. I can see various objections to such an arrangement, and am apprehensive that it would not be found to work well.

Calcutta, 11 November 1848.

I have, &c.
(signed) F. W. Simms, C. E.

From J. H. Mather, Esq., Civil Engineer, Superintending Government Cotton Experiments,
to F. W. Simms, Esq., Consulting Engineer to the Government of India, &c. &c.

Sir,

I HAVE been directed by a letter (No. 811), dated 21st October, from G. A. Bushby, Esq., Secretary to the Government of India, to place myself in communication with you regarding the construction of cotton-cleaning machines for the Government of India at the Lion Bridge manufactory.

2. I am instructed by the same communication that the President in Council is of opinion that, instead of making up at once eight sets of the machines, as was formerly suggested to Government, it will be preferable to begin with the construction of only so many as I can readily undertake with the means at my disposal, and within the estimated cost. As you have so lately reported to Government on the machines already made up for the North Western Provinces, you will, I conclude, be aware that unless a certain number of the machines are made up at the same time they cannot be constructed within the estimated cost of sixty rupees each. I am therefore still of opinion that in order to keep within the estimate it will be desirable (as recommended in my letter to Mr. Bushby of 26th September) to commence on the manufacture of eight sets of the machines.

3. I would also direct your attention to the subject of the tools required for the above work, in addition to those which are at present available for the work. These will consist of a few vices, files, smiths' and carpenters' tools, the cost of which will not exceed three hundred Company's rupees (Co's Rs. 300), this amount being included in the estimate of sixty rupees for each machine.

4. The turning lathes and machinery in the yard will require sundry repairs and adjustments before the commencement of my work, which will occupy me for two or three weeks.

5. I have to request that you will inform me whether the Government stores at present in the yard of coal, coke, iron, timber, &c., can be made available for my work, and that you will also instruct me as to when I am to take charge of the yard.

I have, &c.
(signed) J. H. Mather, C. E.
Superintending Government Cotton Experiments.

1, Hastings-street, Calcutta,
11 November 1848.

(True copy.)
(signed) B. Coomar.

(No. 5536 of 1848.)

No. 47. From C. Allen, Esq., Officiating Secretary to Government, North Western Provinces,
to G. A. Bushby, Esq., Secretary to Government of India, Home Department, Fort
William.

Sir,

Revenue
Department.

I AM directed by the Honourable the Lieutenant-governor to acknowledge the receipt of your letter, No. 814, dated 21st ultimo, stating that Mr. Mather will from that date draw a salary of 400 rupees per mensem, and in reply to inform you that the Civil Auditor, North Western Provinces, has been directed to pass his salary only up to that day.

2. In orders of this Government, dated 31st May 1847, appointing Mr. Mather, it was understood that a notice of three months should be given him before his services were dispensed with. The Lieutenant-governor considers that this new arrangement cancels the former one, and that Mr. Mather has no further claims on this Government.

3. His Honour will be glad to know when he may expect to receive the machines which Mr. Mather has constructed for this Government.

I have, &c.
(signed) C. Allen,
Officiating Secretary to Government,
North Western Provinces.

Agra, 8 November 1848.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 387

MINUTE by the Honourable Sir *T. H. Maddock*, Knight, and concurred in by the Honourable Major-general Sir *J. H. Littler*.

I.
Bengal and
North Western
Provinces.

No. 43.

I WOULD sanction the proposition of employing the workmen on eight machines at once, till all that are required shall be finished.

The tools wanted may be purchased if they cannot be furnished from Government stores, and if one or two lathes can be borrowed so much the better.

On these points desire the Military Board to issue orders without delay. They will report on the subject of the last paragraph of Mr. Simms' letter, and if they deem it proper they may place the Iron Bridge Yard in charge of Mr. Mather.

(signed) *T. H. Maddock.*
J. H. Littler.

24 November 1848.

(No. 1055.)

From *F. J. Halliday*, Esq., Officiating Secretary to the Government of India, Home Department, to *F. W. Simms*, Esq., Civil Engineer.

No. 49.

Sir,

I AM directed to acknowledge the receipt of your letter dated the 20th instant, and to state in reply that the Government of Bengal has been requested to instruct the Superintendent of Marine, on receiving a requisition from you to that effect, to provide freight in the next Government steamer proceeding to Allahabad for the twelve cotton-cleaning machines constructed by Mr. Mather for the Government of the North Western Provinces.

2. Under the circumstances stated by you the President in Council sanctions the construction at once of eight sets of the machine, as proposed by Mr. Mather.

3. Extract of your letter, paras. 3 to 6 inclusive, will be communicated to the Military Board, who will apprise Mr. Mather whether the tools and lathes required by him can be made available from the arsenal or the gun foundry at Cossipore; also, whether he can make use of the stores in the Iron Bridge Yard, and when he can enter upon the premises. If the required tools are not procurable from the Government stores, the President in Council will be prepared to authorise their purchase.

4. The Military Board have been called on to report on your recommendation for vesting Mr. Mather with the charge of the Iron Bridge Yard.

I have, &c.
(signed) *F. J. Halliday*,
Officiating Secretary to the Government of India.

Council Chamber,
25 November 1848.

(No. 1056.)

From *F. J. Halliday*, Esq., Officiating Secretary to the Government of India, Home Department, to the Military Board.

No. 50.

Gentlemen,

IN continuation of Mr. Secretary Bushby's letter of the 21st ultimo, I am directed to forward to you the accompanying extract, paras. 3 to 6, of a letter from Mr. F. W. Simms.

2. The President in Council requests that your Board will have the goodness to ascertain and apprise Mr. Mather whether the tools and lathes required by him can be made available from the arsenal and gun foundry at Cossipore, and whether he can use the stores in the Iron Bridge Yard, as also when Mr. Mather can enter upon the premises.

3. His Honour in Council further requests that your Board will report on Mr. Simms' recommendation to vest Mr. Mather with the charge of the Iron Bridge Yard. Should such an arrangement be deemed proper, the Board can at once give it effect, as it is desirable that Mr. Mather should commence upon his work with as little delay as possible.

I have, &c.
(signed) *F. J. Halliday*,
Officiating Secretary to the Government of India.

Council Chamber,
25 November 1848.

I.
Bengal and
North Western
Provinces.

(No. 1054.)

From *F. J. Halliday*, Esq., Officiating Secretary to the Government of India, Home Department, to *J. P. Grant*, Esq., Officiating Secretary to the Government of Bengal.

No. 51.
Home Department.

Sir,

MR. SIMMS having reported that the 12 cotton-cleaning machines constructed by Mr. Mather for the Government of the North Western Provinces will be ready for dispatch by the next Government steamer proceeding to Allahabad, I am directed to request that the necessary orders may be issued to the Superintendent of Marine to provide freight for them, on receiving a requisition from Mr. Simms to that effect.

I have, &c.

(signed) *F. J. Halliday*,

Officiating Secretary to the Government of India.

Council Chamber,
25 November 1848.

(No. 1071.)

No. 52. From *F. J. Halliday*, Esq., Officiating Secretary to the Government of India, Home Department, to Officiating Secretary to Government, North Western Provinces.

Home Department.

Sir,

IN reply to your letter No. 5536, dated the 8th instant, I am directed to acquaint you that Mr. Simms having reported that the 12 cotton-cleaning machines constructed by Mr. Mather for the Government of the North Western Provinces will be ready for dispatch by the next Government steamer proceeding to Allahabad, the Government of Bengal has been requested to issue the necessary order to the Superintendent of Marine to provide freight for them.

I have, &c.

(signed) *F. J. Halliday*,

Officiating Secretary to the Government of India.

Fort William,
25 November 1848.

EXTRACT from the Proceedings of the Honourable the President of the Council of India in Council in the Home Department, under date the 16th December 1848.

No. 31. From *F. W. Simms*, Esq., Civil Engineer, to *F. J. Halliday*, Esq., Secretary to the Government of India, dated Calcutta, 4th December 1848.

Sir,

I HAVE the honour to submit a duplicate of a letter from Mr. Mather, suggesting that two chuprassies in the service of the Government of the North Western Provinces, now in Calcutta, be allowed a free deck passage to Allahabad on the steamer that is to convey the twelve cotton-cleaning machines, upon condition that they take charge of the packages so far as to see that they come by no injury in the way, and especially in the landing at Allahabad. The men would receive no other remuneration for this service than their free passage, which they would consider an equivalent, for otherwise they would have to walk the whole distance. Under such circumstances I would beg to state, that the arrangement appears to me desirable.

I have, &c.

(signed) *F. W. Simms*, C. E.

(No. 1082.)

No. 33. From *F. J. Halliday*, Esq., Officiating Secretary to the Government of India, Home Department, to *F. W. Simms*, Esq., Civil Engineer.

Home Department.

Sir,

IN reply to your letter dated the 4th instant, I am directed to acquaint you that the Superintendent of Marine will be instructed to provide, on your requisition to that effect, a deck passage for two Government chuprassies in the steamer that may convey the cotton-cleaning machines for the Government of the North Western Provinces.

I have, &c.

(signed) *F. J. Halliday*,

Officiating Secretary to the Government of India.

Fort William,
9 December 1848.

No. 36. From *F. W. Simms*, Esq., Civil Engineer, to *F. J. Halliday*, Esq., Officiating Secretary to the Government of India.

Sir,

I HAVE the honour to enclose the following papers from Mr. Mather, with a view to their being forwarded to the Government of the North Western Provinces:

- 1st. Duplicate of a letter from Mr. Mather to myself, dated 8th instant.
- 2d. Copy of receipt from the steam department for the packages containing the twelve cotton-cleaning machines.
- 3d. Memorandum regarding the twelve cotton-cleaning machines.

4th. Drawing

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 389

4th. Drawing No. 1, showing the elevation and sections of the machines.

5th. Drawing No. 2, showing plan and section of machines as placed in a building.

I would beg to call your attention to the statement of Mr. Mather in the 4th para. of his letter to me, to the effect that it was "the original intention of the Government of the North Western Provinces that he should return to Agra to set up the machines." It certainly appears to me that such an arrangement would have been very desirable to ensure their being erected and set to work in the best possible manner.

Calcutta, 9 December 1848.

I have, &c.
(signed) F. W. Simms, C. E.

By,
Bengal and
North Western
Provinces.

From J. H. Mather, Esq., Civil Engineer, Superintending Government Cotton Experiments,
to F. W. Simms, Esq., C. E., Consulting Engineer to the Government of India.

No 57.

Sir,

I HAVE now the honour to enclose the receipt which I have received from the Steam Department for the cotton-cleaning machines dispatched for the Government of the North Western Provinces, you are already aware that the dispatch of these machines has been delayed for some time, on account of no tonnage having been available per Government steamers.

Enclosure.

2. I also enclose two drawings of the new cotton-cleaning machines, and a memorandum regarding the contents of the several packages, as well as some directions for the erection of the machines and their working gear. I would suggest that copies of the same should be forwarded to the Government of the North Western Provinces.

3. The erection and setting to work of this first set of the new cotton-cleaning machines will require considerable care and attention. It appears to have been the original intention of the Government of the North Western Provinces that I should return to Agra for that purpose, but as this arrangement has not been carried out, I trust that the Government of the North Western Provinces will direct that strict attention be paid to the plans and directions which I now furnish for the erection of the machines.

I have, &c.
(signed) J. H. Mather, C. E.
Superintending Government Cotton Experiments.

Iron Bridge Yard,
Allipore, 8 December 1848.

MEMORANDUM of Enclosures.

Receipt from the Steam Department; Memorandum of packages and directions, &c.;
Two Drawings of new cotton-cleaning machines.

No. 28.
Enclosure.

RECEIVED from the Superintendent of Government Cotton Experiments (13) thirteen cases, (2) two pieces wooden framing, (8) eight cast-iron pillars, (2) two pieces iron shafting, and (3) cast-iron standards for transmission per Government steamer to Allahabad.

Government Steam Boat Office,
8 December 1848.

(signed) M. G. Costello,
Registrar Government Boat Office.

MEMORANDUM regarding one set of new cotton-cleaning machines, &c. for the Government of the North Western Provinces.

No. 29
Enclosure

Twenty-eight packages each marked

HC
AGRA.



Each machine is packed in a separate case, and is complete with the exception of the spur-wheel on the end of the wooden roller spindle. The spur-wheels of all the machines are packed in case No. 12, and each wheel is marked with the number of the machine to which it belongs; the keys for fastening the wheels on to the spindles are tied to the several wheels.

A wooden box will be found packed together with each machine; this box must be placed in front of the machine as shown in the drawing (of the machine) No. 1, which accompanied this Memorandum, in which this box is marked U. Case No. 13 contains the iron rods for guiding the driving-straps of the several machines, from the fast to the loose pulley, and vice versa, in stopping and starting the machines; these rods must be secured by the

* See Mr. Secretary Thornton's letter to Mr. Allen, dated Head Quarters, 30th September 1847: No. 3727 of 1847.

I.
Bengal and
North Western
Provinces.

the two screws attached to them to the floor of the machine-room, in the position shown in drawing No 1, where they are marked *W*.

This case also contains—

Three sets brass bearings for the three cast-iron standards, marked *f* in drawing No. 2.
Twelve large screws for securing standards to the wooden framing.

Seven bundles, each containing four steel keys for fastening cast-iron pulleys, marked *d* in drawing No. 2, on to shafting.

One cast-iron coupling-box and keys, for connecting the two pieces of main shafting, marked *C* in drawing No. 2.

The general arrangement of the machines, and of the shafting and pulleys, &c., for driving the same, will be seen in drawing No. 2. The speed which should be given to the main-shaft, marked *C* in drawing No. 2, is 30 revolutions per minute, but on this point, when the machines are once fairly started, it is possible that a slight deviation from this speed may be found expedient.

Before the machines are tried, the wooden rollers should be well cleaned with sand paper, and then rubbed over with a stone, in the same manner as the native prepares a churka for work.

The steel rollers have been covered with grease to protect them from rust, &c., and will require well cleaning before they are used; strict attention should also be given to keeping all the bearings in the machines well and regularly oiled.

(signed) *J. H. Mather, C. E.*

Iron Bridge Yard,
Allipore, 8 December 1848.

Superintending Government Cotton Experiments.

(No. 1114.)

No. 42. From *F. J. Halliday, Esq.*, Secretary to the Government of India, Home Department, to Officiating Secretary to Government, North Western Provinces.

Sir,

IN continuation of my letter, No. 1100, dated the 9th instant, I am directed to forward, for the information of the Honourable the Lieutenant-governor, the accompanying copy of a despatch from Mr. F. W. Simms, Civil Engineer, dated the 9th idem, together with the two plans in original therewith submitted.

2. Copies of two letters from the Under Secretary to the Government of Bengal, dated the 30th ultimo and 13th instant, are also enclosed.

I have, &c.

(signed) *F. J. Halliday,*

Fort William, 16 December 1848.

Secretary to the Government of India.

No. 43. From *F. W. Simms, Esq.*, Civil Engineer, to *F. J. Halliday, Esq.*, Officiating Secretary to the Government of India.

Sir,

I BEG to enclose a letter I have just received from Mr. Mather, who is engaged to construct certain cotton-cleaning machines for Government, and as I am to leave Calcutta on the 10th, upon business to Cuttack, I would request, in order to save time, that during my absence any instructions from Government regarding Mr. Mather may be forwarded direct to him at No. 1, Hastings-street.

I have, &c.

(signed) *F. W. Simms, Civil Engineer.*

Calcutta, 8 December 1848.

No. 44. From *J. H. Mather, Esq.*, Civil Engineer, Superintending Government Cotton Experiments to *F. W. Simms, Esq.*, Consulting Engineer to the Government of India.

Sir,

WITH reference to your intended absence from Calcutta for a few weeks, I have now the honour to request that you will inform me what arrangements can be made for supplying me with funds for the payment of workmen's wages and incidental charges connected with the construction of cotton-cleaning machines, as I shall require funds for this purpose previous to your return.

2. While engaged in constructing the machines for the Government North Western Provinces, orders were issued by Government from time to time to the sub-treasurer to pay on my receipt such sums as I might draw for, not exceeding a certain amount; in the present instance I would request (if the same system is to be pursued) that the sub-treasurer may be directed to pay such sums as I may from time to time require, not exceeding two thousand Co.'s rupees (2,000 Co.'s rupees.)

I have, &c.

(signed) *J. H. Mather,*

Iron Bridge Yard, Allipore,
8 December 1848.

Superintending Government Cotton Experiments.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 391

(No. 1094.)

From *F. J. Halliday*, Esq., Secretary to the Government of India, Home Department, to Sub-Treasurer.

Sir,

I AM directed to request that you will advance, on the receipt of Mr. Mather, civil engineer, employed in constructing cotton-cleaning machines, for the Government, such sums of money as he may from time to time require, not exceeding in the aggregate 2,000 rupees (two thousand).

Council Chamber,
16 December 1848.

I have, &c.
(signed) *F. J. Halliday*,
Secretary to the Government of India.

I.
Bengal and
North Western
Provinces.

No. 45.

Home Department.

(No. 1115.)

From *F. J. Halliday*, Esq., Secretary to the Government of India, Home Department, to *J. H. Mather*, Esq., Civil Engineer.

Sir,

WITH reference to your letter, to the address of Mr. Simms, dated the 8th instant, I am directed to acquaint you that the sub-treasurer has been instructed to advance on your receipts a sum not exceeding 2,000 rupees, in such proportions as you may from time to time require for the prosecution of your work.

Council Chamber,
16 December 1848.

I have, &c.
(signed) *F. J. Halliday*,
Secretary to the Government of India.

(No. 6614.)

From the Military Board to the Honourable Sir *T. H. Maddock*, Knight, President of the Council of India, in Council, Fort William, 1 December 1848.

No. 48.

Honourable Sir,

WE have the honour to acknowledge the receipt of Mr. Officiating Secretary Halliday's letter, No. 1056, of the 25th November last, and to state that we have instructed Mr. Mather, as per copy of letter annexed; to submit indents for the tools and materials he may require to enable him to carry on his operations at the Iron Bridge Yard.

Department Publ
Works.

2. Our Board see no objection to the occupation of the dwelling-house at the Iron Bridge Yard by Mr. Mather, at the present time, when the premises would otherwise remain empty; and as a temporary measure.

3. A report on the Iron Bridge Yard will shortly be forwarded to Government in the Military Department, embracing the question of the advantages of retaining the yard, and appointing a Superintendent to it.

We have, &c.
(signed) *F. S. Hawkins*, Lt.-Col.
E. Garstin, Lt.-Col.
W. Mactier, Lt.-Col.

(No. 6613.)

From *A. Dallas*, Esq., Officiating Secretary Military Board, to *J. H. Mather*, Esq., Civil Engineer, and Superintendent Government Cotton Experiments.

Sir,

UNDER orders of Government, dated the 25th November last, I am directed by the Military Board to request you to send an indent or requisition on the Board for such tools as you may require, stating precisely their number and description, to enable the Board to take measures for having such tools as are available from Government stores, supplied to you. The Board request you will also indent for such quantities of coke, coal, iron, and timber as you require, in a separate requisition, which will be also supplied from the Government stores.

Military Board Office,
1 December 1848.

I have, &c.
(signed) *A. Dallas*, Officiating Secretary

EXTRACT from Proceedings of the Honourable the President of the Council of India, in Council, in the Home Department, under date the 21st December 1848.

(No. 5822 of 1848.)

From *C. Allen*, Esq., Officiating Secretary to the Government Bengal and North Western Provinces, to *F. J. Halliday*, Esq., Officiating Secretary to the Government of India, Home Department, Fort William.

Sir,

I AM directed to acknowledge the receipt of your letter, No. 1071, respecting the 12 cotton-cleaning machines, &c. &c. in the Government of India, 296—Sess. 2.

I.
Bengal and
North Western
Provinces.

2. The Lieutenant-governor was led to expect, from the annexed passage* in Mr. Simms' Report to your predecessor's address, under date the 7th August last, that some machinery had been constructed at a cost of 516 rupees, for working the 12 machines. No distinct mention of this is made in your letter; but it is hoped that this machinery has been already dispatched, or if not, that it may be so with as little delay as possible.

I have, &c.
(signed) C. Allen,
Officiating Secretary to the Government
North Western Provinces.

Agra, 12 December 1848.

No. 16. From *W. Grey, Esq.*, Under Secretary to the Government of India, Home Department to Assistant Secretary to Government North Western Provinces.

Home Department. Sir,
I AM directed to acknowledge the receipt of the Officiating Secretary's letter, No. 5822, dated the 12th instant, and, in reply, to refer you to the communication of the 16th idem, No. 1114.

I have, &c.
(signed) W. Grey,
Under Secretary to Government of India.

Fort William, 23 December 1848.

EXTRACT from the Proceedings of the Honourable the President of the Council of India, in Council, in the Home Department, under date the 27th January 1849.

(No. 40.)

No. 14. From the Under Secretary to the Government of Bengal to *W. Grey, Esq.*, Under Secretary to the Government of India, Home Department.

Revenue. Sir,
With reference to Mr. Secretary's Bushby's letter, No. 927, of the 1st October last, I am directed to inform you that four of Mr. Mather's cotton-cleaning machines will be sufficient for this Presidency.

I have, &c.
(signed) W. Seton Karr,
Under Secretary to the Government of Bengal.

Fort William, 10 January 1849.

EXTRACT from the Proceedings of the Honourable the President of the Council of India, in Council, in the Home Department, under date the 24th February 1849.

(No. 130 of 1849.)

No. 29. From *C. Allen, Esq.*, Officiating Secretary to Government in the North Western Provinces, to *F. J. Halliday, Esq.*, Officiating Secretary to the Government of India, Home Department, Fort William.

Revenue Department. Sir,
IN reply to Mr. Under Secretary Grey's letter, No. 1141, dated 23d ultimo, I am directed by the Honourable the Lieutenant-governor to say, that no special mention of the machinery inquired about in my letter No. 5822, dated 12th idem, appears to have been made in the correspondence received with your letter, No. 1114, dated 16th idem.

2. If, however, the whole of the machinery purchased of Messrs. Jessop & Co. for working the machines, at a cost of 516 rupees, have been dispatched to Agra, it will be satisfactory to the Lieutenant-governor to receive specific information of the articles, and to be apprised of the numbers of the cases in which they were packed.

I have, &c.
(signed) C. Allen,
Officiating Secretary to Government
North Western Provinces.

Agra, 12 January 1849.

* Messrs. Jessop & Co., for pulleys and shafts to work the machines at Agra, 516 rupees.

"The work executed by Messrs. Jessop & Co. was ordered by Mr. Mather upon the authority of a letter from Mr. Allen to him, dated 1st November 1847 (which is now before me), in the following words: 'You are aware of what machinery there is at this station. Whatever may be required in excess for working the twelve machines, should be brought up by you.'"

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 393

(No. 87.)

From *W. Grey*, Esq., Under Secretary to the Government of India, Home Department,
to *Mr. J. H. Mather*.

L
Bengal and
North Western
Provinces.

No. 30.

Home Department.

Sir,

I HAVE the honour to request that you will be so good as to forward a detailed list of the articles obtained by you from *Messrs. Jessop & Co.*, at a cost of 516 rupees, for the purpose of working the 12 cotton machines which have been dispatched to Agra; and also that you will specify, if possible, the numbers of the packages in which those articles were comprised.

I have, &c.

(signed) *W. Grey*,

Under Secretary to Government of India.

Council Chamber,
6 February 1847.

From *J. H. Mather*, Esq., Civil Engineer, Superintending Government Cotton Experiments,
to *W. Grey*, Esq., Under Secretary to the Government of India.

No. 31.

Sir,

I HAVE the honour, in reply to your letter (No. 87) of the 6th inst., to enclose a copy of *Messrs. Jessop & Co.*'s bill for the cast-iron pulleys and shafting dispatched to Agra, for the purpose of working 12 cotton machines. I also enclose a memorandum of the marks and numbers placed on the several pieces of iron work, &c. alluded to when dispatched from Calcutta.

2. I would take this opportunity of suggesting, that it would be advisable that a quantity of "kupas" (seed cotton), about 50 maunds, should be obtained, for the purpose of testing the cotton-cleaning machines now in course of construction here; an arrangement for procuring the same, and sending it to Calcutta, might be easily made, through the Government North Western Provinces, with *Mr. Hamilton Bell*, of Agra, late cotton agent to the Government North Western Provinces, and the present is the proper season for obtaining it.

I have, &c.

(signed) *J. H. Mather*,

Civil Engineer,

Superintending Government Cotton Experiments.

Iron Bridge Yard, Allipore,
12 February 1849.

COPY of *Messrs. Jessop & Co.*'s Account for Iron Work, &c. supplied to order of
J. H. Mather, for the Government Cotton Experiments North Western Provinces.

1848:		Rs. a. p.
May 11 -	A teak-wood frame, 15 feet long - - - - -	45 - -
	Three cast-iron standards, with plummer blocks, 5 mds. 8 s., brass bushes and screws attached, at 31 rupees - - -	93 - -
	Two wrought-iron shafts and a cast-iron coupling box, two inches diameter, in all 15 feet long, 3 mds. 24 s., at 14 rupees - - - - -	50 6 6
	Turning, boring, and fitting coupling box - - - - -	24 - -
	Eight cast-iron pulleys, 2 and 3 feet diameter x 68, and 12 inches broad, and 28 keys, 20 mds. 27 s. 8 ch. -	289 10 -
	Turning, boring, keying, &c., 40 rupees; cooley hire, Rs. 1. 1. 6. - - - - -	41 1 6
		543 2 -
	No. 927. Less 5 per cent. - - - - -	27 2 -
	Total - - - Co.'s Rs.	516 - -
















(signed) *Jessop & Co.*

(True copy.)
(signed)

A. H. Mather, c. z.

I.
Bengal and
North Western
Provinces.

MEMORANDUM of the Marks and Numbers placed on Iron Work, &c., supplied by Messrs. Jessop & Co., when dispatched from Calcutta on the 8th December.

MARK.	NUMBER.	DESCRIPTION OF WORK.
H C AGRA	13	In this case are three sets of brass bushes, 12 large wood screws, 28 steel keys, one coupling box, and 2 keys.
		One piece teak, wood framing.
		One - ditto - ditto.
		One cast-iron pulley.
		One ditto ditto.
		One ditto ditto.
		One ditto ditto.
		One ditto ditto.
		One ditto ditto.
		One ditto ditto.
		One ditto ditto.
		One piece wrought-iron shafting.
		One - - ditto - ditto.
		One cast-iron standard.
		One ditto ditto.
		One ditto ditto.

(signed) *J. H. Mather, C.E.*
Superintending Government Cotton Experiments.

Iron Bridge Yard, Allipore,
12 February 1849.

(No. 109.)

No. 34. From *W. Grey, Esq.*, Under Secretary to the Government of India, Home Department, to Assistant Secretary to Government North Western Provinces.

Home Department. Sir,
I AM directed to transmit the accompanying memoranda and bill received from Mr. Mather, containing the information required in Mr. Officiating Secretary Allen's letter, dated the 12th ultimo.

Fort William,
13 February 1849.

I have, &c.
(signed) *W. Grey,*
Under Secretary to Government of India.

(No. 138.)

No. 35. From *W. Grey, Esq.*, Under Secretary to the Government of India, Home Department, to Assistant Secretary to Government North Western Provinces.

Home Department. Sir,
I AM directed to forward extract, para. 2, from a letter from Mr. Mather, and to request that the quantity of "kupas" (seed cotton) required by him for the purpose of testing the cotton-cleaning machines in course of construction at Calcutta may be procured either from Mirzapore, or through the agency of Mr. Bell, and forwarded to the Presidency.

Fort William,
24 February 1849.

I have, &c.
(signed) *W. Grey,*
Under Secretary to the Government of India.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 395

EXTRACT from the Proceedings of the Honourable the President of the Council of India in Council, in the Home Department, under date 24th February 1849.

I.
Bengal and
North Western
Provinces.

(No. 249.)

From *C. G. Mansel*, Esq., Officiating Accountant to the Government of Bengal, to *F. J. Halliday*, Esq., Secretary to the Government of India, Home Department.

No. 44.

Sir,

WITH reference to your letter No. 1095, dated the 16th December last, stating that the sub-treasurer has been instructed to advance (2,000 Co.'s rupees) two thousand rupees to Mr. Mather for the construction of his cotton-cleaning machine, I have the honour to request that you will have the goodness to inform me whether that amount is to be written off in the public accounts as a charge, or held at the personal debit of that officer till he furnishes accounts for the outlay audited in the regular course.

Office of Ac-
countant-General
Department.

(I have, &c.

(signed) *C. G. Mansel*,

Officiating Accountant to the Government of Bengal.

Fort William,
16 February 1849.

(No. 133.)

From *F. J. Halliday*, Esq., Secretary to the Government of India, Home Department, to *C. G. Mansel*, Esq., Officiating Accountant to the Government of Bengal.

No. 45.

Sir,

I AM directed to acknowledge the receipt of your letter No. 249, dated the 16th instant, and, in reply, to state that the sum of two thousand rupees therein referred to may be held for the present as an advance at Mr. Mather's debit.

Home Department.

I have, &c.

(signed) *F. J. Halliday*,

Secretary to the Government of India.

Council Chamber,
24 February 1849.

EXTRACT from the Proceedings of the Honourable the President of the Council of India in Council, in the Home Department, under date 24th March 1849.

From *Edward Smith*, Esq., to *F. J. Halliday*, Esq., Secretary to the Government of India, Home Department.

No. 34.

Sir,

I HAVE the honour to request you to inform me whether the Government of India would be willing to allow the set of the new cotton-cleaning machines which, I am informed, are now being constructed for the Government by Mr. J. H. Mather, Civil Engineer, to be despatched to Port Natal, Africa, on payment of all charges for their construction.

I make this application with reference to some experimental cotton cultivation which is at present being carried out at Port Natal by my correspondent, Mr. Galloway, of Manchester.

Having been myself practically connected with the cotton spinning and manufacturing for many years in Preston and at Manchester, and I have had an opportunity of inspecting Mr. Mather's machine when lately exhibited in the Metcalfe Hall, I consider these machines will be much sought after when their advantages become better known, as it fully opens out the cotton, and cleans as well as clears it from the seed.

I have, &c.

(signed) *Edward Smith*.

10, Middleton Row, Chowringhee,
12 March 1849.

(No. 208.)

From *W. Grey*, Esq., Under Secretary to the Government of India, Home Department, to *E. Smith*, Esq.

No. 35.

Sir,

IN reply to your letter dated the 12th instant, I am directed to inform you that the Government will have no objection to place a set of Mr. Mather's cotton-cleaning machines at your disposal, on payment of all charges for their construction.

Home Department.

I have, &c.

(signed) *W. Grey*,

Under Secretary to the Government of India.

Council Chamber,
24 March 1849.

I
Bengal and
North Western
Provinces.

EXTRACT from a Despatch from the Government of India to the Honourable the Court of Directors, in the Home Department; dated 10 October 1849, No. 28.

Mr. Mather to be furnished with iron castings from the Cossipore Foundry for his cotton-cleaning machines. 18. We authorised Mr. Mather's being supplied from the Cossipore foundry with iron castings for his cotton-cleaning machines, provided this could be done without interfering with other more urgent demands on the foundry.

Home Cons., 6th January 1849,
No. 35 to 38.

EXTRACT from the Proceedings of the Honourable the President of the Council of India in Council, in the Home Department, under date the 6th January 1849.

No. 35. From *F. W. Simms*, Esq., Civil Engineer, to *F. J. Halliday*, Esq., Officiating Secretary to the Government of India.

Sir,

IN accordance with the instructions given in Mr. Secretary Bushby's letter, No. 926, of the 21st of October last, para. 3, I have called upon Mr. Mather to send me a report of his progress in constructing the cotton-cleaning machines to the end of the year, and to send me a similar report quarterly. He has sent me the report called for, dated the 2d instant, which I enclose for the information of Government.

The only observation I consider it necessary to make is relative to his proposal in the 3d para., to obtain his iron castings at the Cossipore foundry; this I would most certainly recommend, and request the necessary orders to be sent from Government, either to the Military Board or to Captain Broome, whichever may be proper; and as I am on the eve of leaving Calcutta for Midnapore, I would beg to suggest that the decision of Government respecting the castings, and also any other orders respecting the cotton machines, should be sent to Mr. Mather, at the Iron Bridge Yard, where he has now taken up his residence.

I have, &c.

(signed) *F. W. Simms*,
Civil Engineer.

Calcutta, 3 January 1849.

No. 36. (Enclosure.) From *J. H. Mather*, Esq., Civil Engineer, Superintending Government Cotton Experiments, to *F. W. Simms*, Esq., Civil Engineer, Consulting Engineer to the Government of India.

Sir,

IN reply to your letter of yesterday, I have now the honour to inform you, with reference to the construction of the cotton-cleaning machines, that since the 11th November last (when I was directed by Mr. Secretary Bushby to place myself in communication with you), in consequence of the delay which took place before, I was instructed as to the number of machines to be made, and whence I was to be provided with the requisite tools, and funds for the payment of wages, my proceedings have chiefly been confined to planning and arranging the alterations which I am about to introduce into the new machines, to making drawings, and to setting up a model machine, in which the alterations above alluded to can be tested.

2. On the 11th November I addressed you with reference to the number of machines to be constructed, and regarding the tools, turning lathes, and stores required for the work, and requested your instructions on these subjects. On the 1st December you informed me that the construction of eight sets of machines (as suggested in my letter) was sanctioned by Government; and on the 4th December I received a letter (No. 6613) from the Officiating Secretary to the Military Board (a copy of which I now enclose), informing me that the tools alluded to in my letter to you of the 11th November would be supplied to me from that department. I subsequently wrote to you on the 8th December regarding the funds required for the payment of workmen's wages and incidental charges connected with my work, and on the 20th December received in reply a letter (No. 1115) from Mr. Secretary Halliday (a copy of which I enclose), informing me that the Sub-Treasurer had been instructed to make me the requisite advances for the work; since the receipt of this last letter, I have secured the services of the requisite workmen, and the work will now, I trust, proceed rapidly.

3. I would also take this opportunity of bringing to your notice the fact, that from the inquiries which I have made from Captain Broome, Superintendent of the Government Gun Foundry at Cossipore, I find that some part of my work, viz., the cast-iron work, can be executed at a far cheaper rate at that establishment than at the Bridge Yard, where my work is being carried on; the saving in expense would average about three rupees per maund weight; I would therefore request you to obtain the sanction of Government for my obtaining the iron castings which I may require from the Cossipore foundry; I have spoken to Captain Broome, as well as to Captain Scott, Assistant Secretary to the Military Board, on this subject, and have ascertained from them that no difficulty will be experienced at the foundry in complying with this request after the receipt of the sanction of Government.

I have, &c.

(signed) *J. H. Mather*,
Civil Engineer, Superintending Government
Cotton Experiments.

Bridge Yard, Allipore,
2 January 1849.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 397

(No. 19.)

From *W. Grey*, Esq., Under Secretary to the Government of India, Home Department, to
J. Mather, Esq., Civil Engineer.

Sir,

WITH reference to the 3d para. of your letter to Mr. Simms of the 2d instant, I am directed to acquaint you that the Military Board have been requested to instruct the Superintendent of the Cossipore foundry to meet your requisitions for cast-iron work, provided he can do so without interfering with other more urgent demands on that establishment.

I have, &c.
(signed) *W. Grey*,

Council Chamber,
6 January 1849.

Under Secretary to the Government of India.

L
Bengal and
North Western
Provinces.

No. 38.

EXTRACT from a Despatch from the Government of India to the Honourable the Court of Directors, in the Home Department; dated 10 October 1849, No. 28.

19. THE construction of a cattle-mill to be attached to one of eight sets of cotton-cleaning machines which are under construction by Mr. Mather,* was sanctioned by us at a cost of 530 rupees; and we authorised advances to the extent of a further sum of 2,000 rupees for the machines themselves.

Cattle mill to be attached to a set of Mr. Mather's cotton-cleaning machines. Further advance of 2,000 rupees made to Mr. Mather.
Home Cons., 24th March 1849, No. 36 to 39.

EXTRACT from the Proceedings of the Honourable the President of the Council of India in Council, in the Home Department (Public), under date the 24th March 1849.

From *J. H. Mather*, Esq. C.E., Superintending Government Cotton Experiments, to
F. J. Halliday, Esq., Secretary to the Government of India.

No. 36.

Sir,

I HAVE the honour to request the sanction of Government for the construction of a cattle-mill at an estimated cost of (530 Co.'s rupees) five hundred and thirty rupees, to be attached to one of the eight sets of cotton-cleaning machines which I am at present employed in constructing. It was originally intended that the cattle-mills (one of which is required for working each set of machines) should be made up in the cotton districts, where the machines may eventually be set up; but as it is exceedingly desirable that a full set of machines should be set to work before they are dispatched from Calcutta, I would request permission to construct a cattle-mill at an estimated cost (530 Co.'s rupees) five hundred and thirty Co.'s rupees, which might after the trial here be taken to pieces, and dispatched together with one set of the machines.

2. I would also take this opportunity of requesting that the sub-treasurer may be authorised to advance on my receipts a further sum, not exceeding (2,000 Co.'s rupees) two thousand rupees, as I from time to time require the same for the prosecution of my work, according to the original estimate.

I have, &c.
(signed) *J. H. Mather*, C.E.

Iron Bridge Yard, Allipore,
6 March 1849.

Superintending Government Cotton Experiments.

(No. 209.)

From *F. J. Halliday*, Esq., Secretary to the Government of India, Home Department, to
J. H. Mather, Esq., Civil Engineer, Superintending Government Cotton Experiments.

No. 39.

Sir,

I AM directed to acknowledge the receipt of your letter, dated the 6th instant, and, in reply, to inform you, that the President in Council is pleased to sanction the construction of a cattle mill at a cost not exceeding (530 rupees) five hundred and thirty rupees.

2. I am at the same time desired to inform you, that the sub-treasurer has been instructed to advance on your receipts a further sum, not exceeding (2,000 rupees) two thousand rupees, in such proportions as you may from time to time require for the prosecution of your work.

I have, &c.
(signed) *F. J. Halliday*,

Fort William,
24 March 1849.

Secretary to the Government of India.

* Vide para. 15 of letter to Court, No. 23, 28th July 1849.

I.
Bengal and
North Western
Provinces.

EXTRACT from a Despatch from the Government of India to the Honourable the Court of Directors, in the Home Department, dated the 10th October 1849, No. 28.

20. The papers forming this collection, relative to the purchase of 50 maunds of kupas for testing Mr. Mather's cotton-cleaning machines, are forwarded in continuation of those which accompanied paras. 15 and 16 of our letter No. 23, dated 28th July 1849.

Purchase of 50 maunds of kupas for testing Mr. Mather's cotton-cleaning machines.
Home Cons. 24th March 1849, Nos. 12 to 15.
Home Cons. 7th April 1849, Nos. 26 and 27.

EXTRACT from the Proceedings of the Honourable the President of the Council of India, in Council, in the Home Department (Public), under date the 24th March 1849.

(No. 855 of 1849.)

No. 12. From *C. Allen*, Esq., Officiating Secretary to the Government, North Western Provinces, to *F. J. Halliday*, Esq., Secretary to the Government of India, Home Department, Fort William.

Revenue Department.

Sir,
I AM directed to acknowledge the receipt of Mr. Under Secretary Grey's letter, No. 138, dated 24th ultimo, regarding the purchase of 50 maunds of kupas required by Mr. Mather to test his new machines, and, in reply, to forward copy of a letter this day addressed to Mr. Melville, at Rajpore, in Zillah Banda, Mr. Hamilton Bell having recommended the cotton of that district for the experiment.

Agra, 13 March 1849.

I have, &c.
(signed) *C. Allen*,
Officiating Sec. to Govt. N. W. P.

(No. 857 of 1849.)

No. 13. From *C. Allen*, Esq., Officiating Secretary to the Government, North Western Provinces, to *W. Melville*, Esq., Deputy Collector of Customs, Rajpore.

(Enclosure.)
Revenue Department.

Sir,
I AM directed by the Honourable the Lieutenant-governor to request that you will purchase and dispatch to Calcutta 50 maunds of the best procurable kupas (or seed cotton), for the purpose of testing the cotton-cleaning machines in course of construction at the Government Iron Bridge Manufactory, by Mr. J. H. Mather.

2. The cotton should be forwarded as expeditiously as possible, and from Allahabad, on board the first available Government steamer, to the care of *F. J. Halliday*, Esq., Secretary to the Government of India.

3. Any necessary expenditure will be paid on your submitting a contingent bill for the same to this office.

Agra, 13 March 1849.

I have, &c.
(signed) *C. Allen*,
Officiating Sec. to Govt., N. W. P.

(True copies.)
(signed) *C. Allen*,
Officiating Sec. to Govt., N. W. P.

(No. 15 of 1849.)

No. 27. From *W. Melville*, Esq., Deputy Collector of Customs, Rajpore, to *C. Allen*, Esq., Officiating Secretary to the Government, North Western Provinces.

(Enclosure.)

Sir,
I HAVE the honour to acknowledge the receipt of your letter, No. 857, dated the 13th inst., with orders to purchase and send to Calcutta 50 maunds of kupass. On inquiry, I find there will be some difficulty, and therefore delay, in procuring such a quantity of kupass at this time of the year: the season is past. In this district the kupass is almost all seeded in December and January, and now it can only be collected in dribblets here and there, and at unfavourable rates.

I have lost no time in sending men into the district in search of it: no avoidable delay shall take place; but I fear I shall not be able to announce its dispatch from this place under 20 days. I can only trust that this delay, which is quite unavoidable, may not defeat, nor even retard, the experiment Government has in view.

Rajpore Custom House,
20 March 1849.

I have, &c.
(signed) *W. Melville*,
Deputy Collr. of Customs.

EXTRACT from a Despatch from the Government of India to the Honourable the Court of Directors, in the Home Department, dated the 23d April 1850, No. 17.

17. The papers forming this collection contain a report on the result of a trial at Agra of the cotton cleaning machines constructed by Mr. Mather for the Government of the North Western Provinces.

Report of a trial at Agra of the cotton-cleaning machines constructed by Mr. Mather.

Home Cons. 1st Sept. 1849, Nos. 12 to 17.
Home Cons. 29th Sept. 1849, Nos. 25 to 33.

EXTRACT from the Proceedings of the Honourable the President of the Council of India in Council, in the Home Department, under date the 1st September 1849.

(No. 2630 of 1849.)

From *J. Thornton, Esq.*, Secretary to Government, North Western Provinces, to *F. J. Halliday, Esq.*, Secretary Government India, Home Department, Fort William.

No. 12.

Sir,

I AM directed by the Honourable the Lieutenant-governor to transmit, for the purpose of being laid before the Honourable the President in Council, copies of the correspondence noted in the margin,* regarding the improved cotton churkas prepared by Mr. Mather for this Government.

Revenue Department.

Head Quarters,
13 August 1849.

I have, &c.
(signed) *J. Thornton,*
Secy. to Govt., N. W. P.

From *H. H. Bell, Esq.*, to *J. Thornton, Esq.*, Secretary to Government, North Western Provinces.

No. 13.
Enclosure.

Sir,

I HAVE the honour to transmit, for the information of the Honourable the Lieutenant-governor, a report on the improved cotton churkas prepared by Mr. Mather for this Government, and which I request you to bring to his Honor's notice.

Agra, 12 July 1849.

I have, &c.
(signed) *H. Hamilton Bell.*
(True copy.)
(signed) *R. Thornton,*
Assistant Secretary to Govt., N. W. P.

REPORT of Committee on Mr. Mather's Churkas.

No. 14.
Enclosure.

IN transmitting the enclosed reports of Captain Oldfield of the trial of Mr. Mather's churkas, desired by Government,—in the result stated in which I quite concur,—I trust I shall not be considered as travelling out of the record if I enter into a short recapitulation of the proceedings connected with this subject.

When the cotton cultivation experiment, lately closed in these provinces, was first determined upon, it had been officially stated that the condition in which the produce of this country was brought to market was almost as injurious to its estimation as its inferior quality, and the improvement of this was, in the opinion of many, scarcely secondary.

The Honourable Company had evinced their sense of the necessity of attention to this point, and the sincerity of their intervention, by the introduction of expensive machinery, the invention of which may be said to have created the cotton trade of America. The American cotton gins had proved unsuitable to the short-stapled cotton of the North Western Provinces, but as they had been introduced at considerable charge, their relinquishment was regarded with reluctance.

On the arrival at Agra of Mr. Mather, civil engineer, whose assistance, as scientifically and practically acquainted with machinery, had been engaged, his first attention was turned to the practicability of the adaptation of the existing saw-gins to the cotton of this country; and when, after repeated trials, this was declared hopeless, he brought forward an improved churka of the late Mr. Potter, as constructed on the true principle. This was regarded, by all

* Letter from H. H. Bell, Esq., dated 12th July, with Enclosure. Letter to Mr. Bell of this date. 296—Sess. 2.

I.
Bengal and
North Western
Provinces.

all connected with the experiment with considerable complacency, as it was neither more nor less than the native churka, assumed to be improved by more skilful manufacture. It was asserted that it more perfectly freed the cotton from its seed, thus rendering the relative out-turn of the former larger; that it did much more work; and which to me seemed the great desideratum, that it might be so constructed that a number could be worked at the same time, and by the same power, by machinery, replacing the unequal and uncertain results of manual labour, both as regards quality and quantity, by better preparation and increased returns. It was stated that twelve of these churkas might be turned by one pair of bullocks, and the inventor or improver, Mr. Potter, had protested against any judgment as to the capacity of the instrument, unless moved by the power contemplated in its construction. It is only necessary on this point further to observe, that the construction of twelve machines by Mr. Mather obtained the sanction of Government, and that for the trial of eleven of these, sent up from Calcutta, the experiment now reported was directed.

The practicable out-turn by the native hand churka could not be accurately ascertained; but in the number of people (not less than 300) employed at Kutcherry Ghat, although there were some few who occasionally reached 16 lbs. per diem, the average per churka did not reach 8 lbs. It was assumed by Mr. Mather that his churka would do four times this quantity. A brush and iron grating attached by him to the Potter churka had also the great advantage of cleaning and opening out the cotton after it passed through the rollers. In the common native churka the cotton becomes conglomerated of fuggy, and a subsequent process is necessary to remove this, which is obviated by Mr. Mather's improvement; and it is a remark in the report of the Committee of the Agricultural and Horticultural Society on these churkas, that cotton thus prepared is cleaner than most American cotton imported into Liverpool; and letters from that city speak of it as sufficiently so for all commercial purposes.

It seems to me that, so far as the capability of the machine, the Calcutta trials (see No. IV.) have already determined that a single churka, if worked at the rate in the trial, for a day of twelve hours, can turn out 25 lbs. of clean cotton per day, and that, so far, Mr. Mather's opinions are supported by results.

If, by inexpensive machinery, twelve of these could be kept in regular motion for a day's work of twelve hours, so that the out-turn would be 300 lbs. per day, more or less, I should have been disposed to say that he had solved the problem of the description of machine which might be advantageously employed in this country for freeing cotton from its seed. My aim has been, therefore, to ascertain if this had been reached by Mr. Mather in the machinery sent up to Agra; whether this had been done in the most economical and effectual manner was also to be ascertained, and was, at least, questionable.

As Mr. Mather in his letters dwells strongly on the all importance of adjustment, the sanction of Government was obtained for the construction of a building for twelve machines, strictly on the plan sent up with the machinery, and this has been accurately done by Mr. M'Kenzie.

Whilst completing all necessary arrangements, repeated trials have been made singly, or with a few churkas; but in these the highest result obtainable has not passed 12 lbs. as a product of a day of 12 hours. This seems to me to determine that we have not so adjusted the churkas, or managed the power, as to avail of their capability to the fullest determined extent.

The trial of the 25th May was attended with the great disadvantage of the gearing having become loose, and out of order, by a change of the wind to the east during the preceding night, after it had been well set up, which necessitated the adjustment of the leathern straps; and after all these worked imperfectly, and, in fact, would not work at all in some cases.

The returns are accurately given by Captain Oldfield, and it will be seen they do not much exceed one-fifth of that obtained in the trial in Calcutta. There are but two alternatives; either the machinery is unsuited to its purpose and deficient in power, or its adjustment is inaccurate.

The bullocks were estimated to travel at the rate of two miles per hour. Four pairs were employed, but it was not ascertained how much of their power was exhausted in putting the rather heavy machinery, which originally was made use of for working the American saw-gins, in motion, or how much, in fact, was superfluous.

I think it probable two pairs could have been kept to the same pace; but the question of the power employed was secondary, until we had ascertained that the machinery and its setting up were such that, as some bullock power, we should obtain an out-turn similar to that reported in Calcutta.

In my opinion, the number of revolutions of the rollers resulting from the existing machinery turned by bullocks driven at this pace, would be quite inadequate to the effectual working of the churka; and though Mr. Mather's scientific mechanical knowledge might probably easily remedy this, I feel myself bound to express my opinion that bullock power with the machinery in use as sent up will not produce the results expected by Mr. Mather, and that in this respect the experiment has failed.

I concur in Captain Oldfield's opinion, that the position of the feeding box is an obstruction rather than a convenience, and that the screw and brass bearing also greatly impedes the feeder, and has the objection attributed to it; whilst I must also avow I do not perceive their necessity for the object for which they were intended, unless the rollers had been of much greater length.

If our experimental trial of the 25th May had been confined to Mr. Mather's machines,
I should

I should not have hesitated to assume that the unfavourable out-turn might be ascribed to an imperfect adjustment of the machinery, and I should, perhaps, have suggested repeated trials; but facts have arisen, in the course of those which have taken place, which satisfy me that no advantage could be derived from perseverance with the Mather churka as made up in Calcutta for this Government.

My reasons for this arise from its having occurred to me to try the native churka with a driving-wheel attached, by which the manual labour of turning them was superseded, two of them being kept in motion with the same power, and at the same time as Mr. Mather's. The out-turn of that with the larger driving-wheel (the smaller not working properly), was, relatively to Mr. Mather's, as 12 to 5 $\frac{1}{2}$, and it seemed a necessary consequence that the capability of the common churka had not been maintained in Mr. Mather's improved machine.

Such conclusion, if solely dependent on this experiment, might have been considered hastily adopted, but it resulted also from several experiments which, whilst engaged in putting up the machinery, had casually suggested themselves to me, and which seemed to embrace both points, the effective character of the machinery moved by bullock power, and the completeness of the improved churka, as constructed by Mr. Mather.

In these experiments I had ascertained that a more rapid revolution of the rollers produced by turning the machinery by coolies at a running pace, perhaps exceeding four miles an hour, which was easily done under the inconsiderable friction arising from a single churka, Mr. Mather's churkas yielded at the rate of 12 lbs. per day, nearly two and a half times the result in our subsequent regular trial; and I think I am justified in assuming this to be a quickness of movement which the usual draught cattle here could not attain, and certainly not maintain for any length of time. But whilst we were thus advancing towards the Calcutta out-turn, though still greatly below it, and, it seems to me, had established the inadequacy of bullock power with the machinery set up, the common churka with the driving-wheel gave a produce which appears to settle the question of the relative efficiency of the two forms of the machine, turning out at the rate of nearly 44 lbs. per diem, little short of four times the quantity of the Mather churka then in activity under the same power, and almost twice the most favourable result arrived at in Calcutta under Mr. Mather's own superintendence; whilst, moreover, so far as my observation went, the maximum desirable velocity of revolution of the rollers had not even then been attained.

The native churka required some alteration to enable it to withstand the vibration resulting from the rapid movement under the substitution of the driving-wheel for hand power; a third standard seemed to me essential, and greater stability, and as the cost was less than five rupees I considered that it was desirable to construct two of such description, and include them in a further trial of Mr. Mather's at greatly accelerated velocity; as immediately subsequent to the trial now under report, letters from that gentleman pointed out that our arrangements were objectionable, from having used his churkas as sent up from Calcutta, instead of roughing the rollers by the chisel or sand-paper. To this he attributed the diminished out-turn in our casual trials whilst erecting the machinery, which I had incidentally noticed in my correspondence with him. I have directed two or three of his churkas to be thus prepared, and the result will be shown in a further trial, for which this report is detained.—Agra, 30 May 1849.

The trial above adverted to took place on the 5th instant. It had been thus long deferred from unavoidable delay in the construction of the native churkas, with the additional standard, and subsequently by the unfitness of the cotton, arising from the dampness of the atmosphere. Both Mr. Mather's churka and the native one worked perfectly, and the relative out-turn accurately represents their relative capability; but neither had the advantage of a practised feeder, as I had been disappointed in obtaining the men I had selected, and none of the coolies were experienced hands, so that at last we were forced to put up with a working carpenter in attendance for adjusting the machinery.

Captain Oldfield gives the number of revolutions per minute of the several rollers, which I of course left to him, chiefly confining my attention to the apparent effect of the great velocity of revolution of the rollers, which, compared with that of our former trial on the 25th May, was as 400 to 53. The result, as regards the separation of the seed by the native churka relatively to that trial, was as 40 to 12, and only as 40 to 44 with reference to some of my former experiments. But I am persuaded, had the same feeder been employed on both occasions, the result would have been widely different; for I particularly remarked that, at the most rapid rate, the seeds were forcibly thrown off, and the cotton passed through without the slightest impediment.

It was manifest that this high working velocity cannot be maintained with the native churka fitted with a driving wheel, the vibration resulting from the extremely rapid revolution of the rollers, considerably above 1,000 times a minute in the iron one, having so very sensible an effect in our short trial as to render one doubtful if the churka would stand to the end of it. Cast-iron standards, however, would be little costly; and these, and the substitution of brass in which the iron endless screw should move, in the place of the wooden one on which it now works, would, by greater durability and less friction, afford a very effectual machine at a very trifling expense.

The result of these trials appears to me to have completely established that the Mather churka is not the improved form of that machine which it is desirable to follow; and that the common churka, with a driving wheel, far exceeds it in efficiency. With the suggested improvements, I imagine the cost of a churka would not exceed 10 rupees.

It must not, in justice to Mr. Mather, be omitted, that the cotton turned out by his
296—Sess. 2. 3 E churka

I.
Bengal and
North Western
Provinces.

churka was beautifully clean, and well opened out by the action of the brushes. Cotton from the native churka will require a similar process; and I am inclined to think that a machine I am making up, and which I explained to Captain Oldfield, as I see he has noticed, will have this effect in a very superior degree. One will suffice for 20 or 30 churkas.

I have not a doubt that we have reached one of the great objects urged on the notice of the Honourable the Court of Directors by the Liverpool merchants as of the highest consideration. I am persuaded that, so far as ginning the cotton from its seed with rapidity and unbroken fibre, we surpass the American saw-gin, and that, in preparing it for the market, the charges incurred will not equal those when the saw-gin is in use. I believe we have done so much; but this will not avail to make India a participator in the cotton trade of England, so long as American cotton can be sold in England at $3\frac{1}{2}d.$ to $4d.$ per pound.

Captain Oldfield's report is herewith transmitted.

Agra, 12 July 1849.

(signed) *H. Hamilton Bell.*

(True copy.)

(signed) R. Thornton,
Assistant Secretary to the Govt., N. W. P.

No. 15.
Enclosure.

MEMORANDUM on the Trial made of the Experimental Cotton cleaning Machines at Agra, on the 25th May 1849, consisting of Eleven of the Machines sent up by Mr. Mather, and Two Native Churkas, with Driving-wheels differing in Diameter.

THESE machines were attached to a capstan, with four pair of bullocks working at the bars. The pace of the bullocks was about two miles an hour, and the revolutions of the brushes of the English machines about 200 per minute. The result was that in half an hour eight of the machines had turned out 29 oz. of cotton and 53 oz. of seed; *i. e.* 82 oz. or about five lbs. of kupas had been cleaned in half an hour by eight machines worked by eight bullocks. Three of the machines had been thrown out of gear during the working by the shifting of the driving bands of the steel rollers.

The average of clean cotton produced by each machine was $3\frac{1}{2}$ oz. in half an hour; thus a day of 12 hours would have produced but $5\frac{1}{2}$ lbs.

The native churka, with a driving wheel of three feet, was making about 53 revolutions of the wooden roller per minute, or about the same as that of the English machines, the iron roller working on the wooden one by means of an endless screw, in the manner usual to native churkas.

The out-turn was eight ounces of clean cotton, being 12 lbs. for the 12 hours, or double the quantity turned out by the English machines.

The other native churka, worked with twice the velocity of the former, produced but five ounces in the half hour.

This last was ill set up, and the experiment was not conclusive against the higher velocity. Further trials are much needed as to the best velocity, and the experiment may be easily and cheaply carried on, by attaching various sized driving wheels to a dozen native churkas, which cost but eight annas each.

I do not observe that Mr. Mather has anywhere stated what he considers the best velocity, nor the force required for driving his machines at this and at lower velocities; he has thus given no estimate of the probable cost of cleaning cotton by the machines made up by him, although his attention was called to this point by the committee which examined at Agra the machine he brought up with him from Calcutta.

The small out-turn of the machines in the trial of the 25th current is doubtless in part owing to the want of a fly wheel to equalise the velocity attained, the motion of the bullocks being very irregular; most probably, also, the best velocity was not attained. The bullocks, however, seemed to have full work, and the pace of two miles an hour is perhaps that best adapted to husband their strength.

The machine seems to have received little or no improvement from Mr. Mather, but to be similar in almost every respect to what it was when he first introduced it to notice, unless the screw and brass, being marked H and I in the plates accompanying the description in the Journal of the Agricultural and Horticultural Society, is an improvement of Mr. Mather's on the original machine. But of this the most has not been made; as it would, by giving an additional point when force is applied to keep the wooden and iron rollers in adjustment, have allowed an additional length to have been given to them, and thus have obviated one of the disadvantages which the driving gear projecting close at the ends of the rollers causes, *viz.*, lessening the freedom of action in the feeder, who is much more cramped in his action than in the native machine.

It seems as if by a little ingenuity much longer rollers might be driven by one set of wheels, their adjustment to contact at intervals being effected by supports and adjusting screws, similar to those in the middle of the roller of the present machine.

The feeding now has likewise been inconveniently placed, by which also the feeder's movements are cramped.

To

To the more unconstrained posture of the feeder I attribute the greater out-turn of the native churka on this trial.

There may be likewise some advantage in the slightly tapering or conical form observable in the rollers of the native churkas.

Certainly the seed was cleanest in this experiment for the native churka, which I attribute partly to the diagonal direction, through the rollers, given to the cotton caused by their taper. Driving the steel rollers, as in the Calcutta machines, by a short band, is decidedly objectionable, and is a frequent cause of delay. On the whole, I think it is a pity that, before any number of these machines were made, they should not have had a few months trial in constant work, to try the efficiency of the adjustment required by the wear of the rollers, to have the best speed; the best form of roller; of communicating motion to the steel roller, whether by a second set of cogged wheels or by the endless screw, and other practical adjustments, which I conclude want of leisure has prevented Mr. Mather from attending to.

Moreover, it does not appear, as recommended by the committee to which the machine was originally shown at Agra, that it was submitted to the Mint Master and Superintendent of Government Machinery at the Presidency, whereby the cost of making up so large a number of these unimproved machines might have been avoided.

Agra, 25 May 1849.

(signed) J. R. Oldfield,
Captain, Engineers.

4 July 1849.

Postscript.—A trial was made this morning between one of the English churkas and a native churka with wooden standards, and a driving wheel on the wooden roller five inches and a half in diameter, or an inch less than that on the brush of the English machine. The velocity with which this wooden roller revolved was thus about four times greater than that of the other. (I have not the plan or measurements of the machine by me, but this is a sufficient approximation.)

The capstan was worked by eight men, who travelled at the rate of between three and a half and four miles an hour. The rate of revolution of the wooden roller in the native churka may therefore be taken at 400 per minute; of the English machine at 100.

The trial lasted a quarter of an hour, in which time the English churka turned out 5 $\frac{3}{4}$ oz. of cleaned cotton, the native churka 13 $\frac{1}{4}$; the former being 17 lbs. per diem of 12 hours, the latter 40 lbs.

The best feeder being at the native churka, the feeders were changed, and both machines worked again, but for five minutes only; the results were 4 $\frac{1}{4}$ oz. by the native, and 2 $\frac{1}{4}$ oz. by the English churka. Supposing both to have been fed by the best feeder the results would be as 40 to 20 nearly.

These results so far confirm those of the 25th May last, that they show an inferiority in the out-turn of the English machine, caused principally by the difficulty of feeding it consequent on its present construction. The native machines, or one worked directly from the principal shaft, with endless screw communicating the motion from the wooden to the steel roller, works with less friction, and must therefore pay best, *i. e.*, be less costly in working. The working the brush at a high velocity, and then taking off a lower velocity for working the wooden roller is a great waste of power, and though the machine with the endless screw must have metal standards and gear to work at the great velocity required, it will still be a simpler and less expensive machine than the one made by Mr. Mather.

The great out-turn of the native churka this morning proves the advantage of a high velocity; the necessity of an equable motion is also obvious. Steam power is therefore essential to any useful result. At the rate reached this morning, one person is fully employed in feeding; there is thus no loss of labour in his not having to create the motive force in addition.

Mr. Bell has suggested that the brushing process would be best carried on separately with large machines, fed with cleaned cotton, and worked at very high velocities, and in this I agree with him, as the friction and cost of a great number of these brushes, whose size is necessarily restricted by the shortness of each cleaning roller, must be greater than that of a single brush many times larger, and doing more than a proportionate quantity of work.

Agra, 4 July 1849.

(signed) J. R. Oldfield,
Captain, Engineers.

(True copy.)
(signed) R. Thornton,
Assistant Secy. to the Govt., N. W. P.

(No. 2632 of 1849.)

From J. Thornton, Esq., Secretary to the Government, North Western Provinces, to
H. H. Bell, Esq., Agra.

Sir,

IN reply to your letter, dated 12th ultimo, I am desired to return the thanks of the Honourable the Lieutenant-governor for the reports transmitted by you on the improved
296—Sess. 2. cotton

I.
Bengal and
North Western
Provinces.

cotton churkas prepared by Mr. Mather for this Government, and to state that the reports will be forwarded for the information of the Supreme Government.

2. The Lieutenant-governor requests that you will have made up, at the expense of Government, some native churkas, with improved metal standards, as proposed in your letter under acknowledgment. The number to be constructed, and the place where they are to be made, are left to your discretion. You are also requested to have an experimental machine prepared for cleaning cotton on the plan you propose, separate from the churkas, but which may be driven by the same motive power. His Honor desires that you will favour him with a report on the working of these machines, as soon as conveniently practicable.

Head Quarters,
13 August 1849.

I have, &c.
(signed) *J. Thornton*,
Secretary to the Govt., N. W. P.

(True copy.)
(signed) *R. Thornton*,
Assistant Secy. to the Govt., N. W. P.

(No. 493.)

No. 17. From *W. Grey*, Esq., Under Secretary to the Government of India in the Home Department, to *F. W. Simms*, Esq., Civil Engineer.

Sir,

I AM directed by the President in Council to forward, for communication to Mr. Mather, the accompanying copy of a despatch from the Government of the North Western Provinces, dated the 13th ultimo, with enclosures, detailing the results of some trials which have been made of the cotton machines manufactured by him last year for that Government.

Council Chamber,
1 September 1849.

I have, &c.
(signed) *W. Grey*,
Under Secy. to the Govt. of India.

EXTRACT from the Proceedings of the Honourable the President of the Council of India in Council, in the Home Department, under date the 29th September 1849.

No. 25. From *F. W. Simms*, Esq., Civil Engineer, to *W. Grey*, Esq., Under Secretary to the Government of India; dated Cossipore, the 20th September 1849.

Sir,

As instructed in your letter (No. 493 of the 1st instant), I have submitted to Mr. Mather the reports of Mr. Bell and Captain Oldfield (enclosed therewith), upon his (Mather's) cotton-cleansing machines, with a request that he would forward, for the information of Government, whatever observations he might have to make thereon. I now forward his remarks.

It was also my intention of examining and reporting upon the state of the machines now being constructed by Mr. Mather in the Government Iron Bridge Yard, but the state of my health not permitting me to do so, I deputed my Assistant, Mr. John Fraser, to that duty, and his report I also enclose.

As respects the cotton-cleansing machines, which are the subjects of Messrs. Bell and Oldfield's reports, I cannot refrain from stating that I consider it is much to be regretted that Mr. Mather was not sent to Agra to fit them up and set them to work, as appears to have been originally the intention of the Government of the North Western Provinces, for that would have been the most satisfactory to all parties. And I will here take the liberty to recommend to Government, as soon as the machines which Mr. Mather is now making are completed, to send him to put up and set to work the first set that is erected; and, as the cotton cultivation experiments at Agra have ceased for some time, by order of the Court of Directors, in consequence, as I understand, of the unfavourable reports of the cotton of that district, I would further advise that, for setting up the new machines, particularly the first set, the best and most favourable cotton-growing district in India should be selected for that purpose, wherever it may be; and that the experiments or trials should not be limited to a few minutes, or even an hour, or a day, but that the machines be set actually to work upon a tolerably large scale, and clean sufficient cotton to forward to England, where its qualities as an article of commerce, and its comparative value with similar cotton cleaned in the old way, would be determined by the most competent judges, namely, the cotton traders and manufacturers; and also by such a trial their economical value, in comparison with the native churka, or whatever machines they may be tried against, will be most satisfactorily ascertained. Such appears to me the proper way to test the merits of Mather's or any other machines, and enable the Government and the public to judge how far the outlay incurred has been advantageous to that branch of commerce.

I have, &c.
(signed) *F. W. Simms*, C. E.

From *J. Fraser*, Esq., Assistant Civil Engineer, to *F. W. Simms*, Esq., Consulting Engineer to the Government of India and Director of the Railway Department, dated Calcutta, 10th September 1849.

Sir,

IN obedience to the instructions I received from you on the 7th instant, to visit the Iron Bridge Yard, and inspect the eight sets of cotton-cleaning churkas now making up there by Mr. Mather, and to report to you the state of forwardness they are in, I have the honour to submit the following statement, which will show the exact state of the work at the present time, and also the improvements introduced by Mr. Mather since the first set of 12 machines were made up for the Government of the North Western Provinces last year.

2. Five sets of machines are set up, namely, the cast-iron work as well as the wrought, the shafts, gun-metal brushes, the driving pullies, and holding-down bolts. The rollers and toothed wheels are now being fitted to the above.

3. The cast-iron frames for the sixth set are likewise ready, and are now being fitted up.

4. Part of the castings of the seventh set are also made; the wrought-iron stays and brush boards for all the eight sets are complete; so that I think there is every probability of the whole of the eight sets being finished by the end of December this year.

5. Having stated the progress made towards the construction of the eight sets of machines, I will now mention the improvements introduced by Mr. Mather, and which I think are deserving of especial notice; they are as follow:—

6. The two rollers are fitted in a slide worked in the cheeks of the frame of each machine, and fixed at an angle of 22°; the steel roller thereby being brought forward does not occupy the vertical position with regard to the wooden roller that it did in the former machines, as suggested by yourself in your public report to the Supreme Government.

7. The strap used for driving the steel roller is now abolished, the wood and steel roller being made to work by means of two endless screws; that attached to the wooden one is of brass, and that on the steel roller worked out of the same metal as the roller itself. The endless screws just mentioned are exceedingly well cut by a self-acting screw-cutting lathe, which Mr. Mather has hired at his own private expense, owing to the Government being unable to supply him with one suitable for the purpose; and without it these screws could not have been cut. The screw attached to the wooden roller is six-threaded, and that on the steel one two-threaded.

8. An alteration has also been made in the spindle which runs through the wooden roller, by which the wood can be removed, when worn out, and a new piece substituted by any village carpenter, without (as in the former machines) its being requisite to fresh turn the bearings of the spindle.

9. The steel roller is turned with a slight taper towards each end, the same as the common native churka; the centre brass bearing has been abolished, and consequently the iron bar above it to which the said screw was attached. By this arrangement much additional room is given to the feeder, and his movements are less impeded. I must here explain that, in order to bed the taper steel roller firmly on the wooden one, a corresponding concave taper is turned out of the latter.

10. A large spur wheel is fixed on the lower axle, by which motion is communicated to a pinion on the wooden roller; an arrangement which has greatly the advantage over the former method of driving by bands, as it not only (with the addition of the endless screw) increases to a certainty the number of revolutions of the steel roller per minute, but prevents any loss of power, having the security of cogged gearing. One of the machines was worked in my presence with a driving wheel of 2 feet 8 inch diameter, and a velocity of upwards of 1,200 revolutions of the steel roller per minute was obtained with ease, and I am certainly of opinion that the machines should not be worked at a slower rate.

11. An intermediate brass bush (or bearing) has also been introduced between the two rollers, at each end, so as to give the steel one a separate bearing, and not as in the former machines, where it was allowed to revolve and bear on the surface of the wooden roller, which in course of time would so abrade the surface of the wood that no cotton could pass cleanly through them. The said bush is made to work perfectly clear of the axle of the wooden roller, and consequently no friction is added to the working of the churka by the introduction of it.

12. I may here add that Mr. Mather has, at his own cost, made up two small machines experimentally on a new plan without brush fans, and has likewise tried various experiments with different descriptions of endless screws, rollers, and speeds, in order to ascertain the very best possible form of construction for the machines. They are worked with two endless screws as in the machines now under discussion; but the rollers are placed vertically over each other, and not at the angle of 22°, as in the eight sets now in progress.

I.
Bengal and
North Western
Provinces.

13. During my inspection I saw a small quantity of cotton passed through the two last-named churkas, and observed that the absence of the brush revolving on the back of the rollers caused them to clog, which delays the feeder in his work, as the machine had frequently to be stopped to clear the rollers of the superfluous cotton adhering to them. From previous observation, and from every trial I have witnessed, I am convinced that the brush is just as essential to clear the rollers and prevent them from clogging, as it is for opening out the cleaned cotton.

14. In conclusion, I wish to remark that the castings are excellent, and that the fitting-up and workmanship of the machines reflect great credit on Mr. Mather.

I have, &c.
(signed) *J. Fraser*,
Assistant Civil Engineer.

No. 27.

From *J. H. Mather*, Esq., C. E., Superintending Government Cotton Experiments, to
F. W. Simms, Esq., C. E., Consulting Engineer to the Government of India, &c. &c.

Sir,

I HAVE the honour to acknowledge the receipt of your letter of the 7th instant, together with its several enclosures as noted in the margin thereof, and I now proceed to offer a few remarks regarding the manner in which the trial of cotton-cleaning machines at Agra was conducted, as reported to the Government of the North Western Provinces by Mr. H. Hamilton Bell and Captain Oldfield.

2. I forward with this letter, for the information of Government, detailed replies to all the principal points urged in this report (Appendix A.). For the sake of an easy reference I have drawn up these replies in parallel columns with the particular passages in the report to which they have reference. From these replies it will be seen that I attribute the apparent failure of the experiment to my not having been allowed to erect the machines myself, and to regulate their speed, &c. at their first trial. When I made my arrangements with the Government of the North Western Provinces in September 1847 to proceed to Calcutta to manufacture these machines, I specially stipulated that I should be allowed to return with them when finished, and to erect them at Agra; and in the letter from the Secretary to Government, North Western Provinces, to Mr. C. Allen (who was then in charge of the cotton operations at Agra) conveying the sanction of Government to my proposed visit to Calcutta, it is stated, "all these proposals meet with the entire concurrence of the Lieutenant-governor; you are therefore requested to make arrangements for paying the expenses of Mr. Mather's journey to Calcutta, and of his return with the required machinery, as well as for the payment of his salary during his absence." When the machines were ready for despatch to Agra, I wrote several private letters to Mr. Hamilton Bell, strongly urging him (as the late Government cotton agent) to remind the Government, North Western Provinces, of the arrangement above alluded to; but in reply Mr. Bell merely informed me that he was confident that I should not gain anything by visiting Agra. And again, on 30th March last, nearly two months before the first trial of the machines took place, I again reminded him in a demi-official letter (*see* Appendix B.), of my strong desire to be allowed to superintend the trial. You will yourself remember my having more than once brought this subject to your notice, and in my official letter to you of 8th December last, when dispatching the machines from Calcutta, I again noticed the change that had been made in the original arrangements of the Government, North Western Provinces, and at the same time requested that strict attention might be paid to the directions regarding the machines which I furnished; and I would here notice that strict attention does not appear to have been paid at Agra either to the directions forwarded as an enclosure with my letter to you of 8th December last, or the suggestions subsequently made to Mr. Bell in my letter of the 30th March (*see* Appendix B.). In the former case I particularly directed that it would be necessary, before working the machines, to roughen the surface of the wooden rollers, first cleaning them with sand-paper, and then rubbing them over with a stone in the same manner as the native prepares his churka for work; but from Mr. Bell's report it appears that this was not done till the 5th July, when the second recorded trial took place; the machines had therefore at the first trial (on 25th May) as well as at the "repeated trials" which Mr. Bell says he had previously made, "singly and with a few machines," been set to work without any attention being paid to the above direction; and this alone, coupled with the fact that the steel or copper rollers had been greased (to prevent rust) before leaving Calcutta, would cause the machine to work very imperfectly, as the rollers would not be in a state to "bite" or draw forward the staple. Again, in my letter of 30th March (Appendix B.), I suggested the introduction of certain intermediate gearing, by which the working speed of the machine would be considerably increased. I sent a working drawing of the same with my letter, and pointed out that the shafts and pulleys required were to be found among the old cotton machinery at Agra; but this suggestion appears also not to have been acted on. In the same letter I also noticed that the bullock mill which Mr. Bell had selected for driving the machines would probably be found too heavy for the purpose, but notwithstanding

See Mr Secretary
Thornton's letter
to Mr. Allen, dated
Head Quarters,
30 September 1847,
Para. 5.

standing this suggestion, and the fact that there was another and lighter bullock mill at hand and available for the purpose, this heavy mill is retained.

3. The next point to which I would direct the particular attention of Government is a most important one. While at Agra in June 1847, I set to work a rough machine, alluded to in my reply to Extract 2 in the subjoined statement, which comprised all the most important alterations which I subsequently introduced into the Calcutta-made machines, but which laboured under many disadvantages, on account of my having neither workshop or tools available at Agra. (The machine here alluded to is the one which, together with Mr. Potter's, was shown to you when you first took charge of the supervision of my work in December 1847.) The roller had not an iron spindle through it, the bearings consequently were of wood, and the heavy spur-wheel keyed on to the wood caused the roller to spring and work imperfectly; yet, notwithstanding this and other disadvantages, the committee appointed by the Lieutenant-governor thus report on it, when placed in competition with the native churka:—

“The trials thus gave a rate of 7½ lbs. or 3½ seers of seed cotton in the hour to the machine, and 4 lbs. or 2 seers of kupas to the churkas. Divide the weight of seed cotton by 3, the usual proportion of wool in each case, and we have 1½ seer in an hour for the machine against ¾ds of a seer for the churka, or a very small fraction more than half.” Now, from the description given above of the rough machine, it must be apparent that if under all the disadvantages adverted to, an out-turn of 1½ seer of cleaned cotton per hour (or 30 lbs. per day of 12 hours) was obtained from it at Agra (as above recorded), a much larger out-turn would naturally be the result from the same machine properly and mechanically constructed, and after the native feeder had by a few weeks' practice become accustomed to it. But Mr. Bell and Captain Oldfield state that at their first trial, on the 25th of May, the machine only gave an out-turn of 5½ lbs. for a day of 12 hours, and at the second trial, on the 5th of July, an out-turn of 17 lbs. per day of 12 hours. The extraordinary difference between the results of these two trials, together with the fact above mentioned, of my rough machine having turned out at the rate of 30 lbs. per day of 12 hours, ought surely to have induced Messrs. Bell and Oldfield to have had a third trial as a simple matter of justice to my machines; but by his report Mr. Bell (who took the principal part in these trials, and to whom the erection of the machines had been entrusted) appears to have made up his mind at the time of the first trial, on the 25th of May, “That no advantage could be derived from perseverance with the ‘Mather’ churka as made up in Calcutta.” These are the words recorded by Mr. Bell in the former portion of his report, bearing the date of 30th May, and neither the increased out-turn of the 5th of July (being 17 lbs. instead of 5½ lbs., as on 25th May), nor the facts that the machines were imperfectly erected, and driven at too slow a speed, appear to have had any influence with Mr. Bell, who subsequently to the last trial records in his report, “The result of these trials appears to me to have completely established that the ‘Mather’ churka is not the improved form of that machine which it is desirable to follow.” Mr. Bell ought, I think, to have here stated that he had been in constant private communication with me for the last two years, and that during the last six months I have from time to time informed him of the alterations and improvements which I am now introducing into the eight sets of machines now making up here, some of which alterations thus communicated are very important, and one of which (viz., a brass screw on the wooden roller) I perceive he suggested for his new churka, but omits to mention that he received information from me more than three months ago on this very point, together with an account of my self-acting screw apparatus.

4. Another point to be noted is, that by Captain Oldfield's report, it appears that the first trial on 25th May lasted only for half an hour, and that of the 5th July only for one quarter of an hour, so that after two trials, together lasting only three-quarters of an hour, my machines are condemned. The object of sending these machines to Agra was that they might be practically tested, for which a trial of a month or six weeks, without cessation, would have been by no means too long; a comparative petty trial of half an hour could have been just as well tried in Calcutta or elsewhere, and was tried by a special committee assembled in Calcutta, at the request of the Agricultural and Horticultural Society of India, jointly composed of scientific officers and of merchants conversant with the valuation of cotton in the English markets, and at the recommendation of this committee the Society awarded to me their gold medal and a premium of 500 rupees.

5. On a perusal of this letter and its enclosures, I am convinced that you will coincide in the opinion which I have arrived at after reading the reports, viz., that justice has not been done to my machines; that they were imperfectly erected in the first instance; that the trials lasted for far too short spaces of time; that a third trial ought decidedly to have been made; that attention was not paid to my written suggestions; and that there appears to have been a tendency throughout the trials on behalf of the judges to arrive at hasty and unsound conclusions.

6. With regard to Captain Oldfield's assertion, that it does not appear that the making up of so large a number of machines (viz. twelve) was sanctioned by the Mint Master, I have only to state that I was in communication regarding these machines with both Colonel Forbes and Colonel Greene, and that, up to the date when Mr. Secretary Bushby informed me that you would in future supervise my work, I acted with the full concurrence of both

I.
Bengal and
North Western
Provinces.

these officers. And with regard to the number of machines made up (twelve), so specially alluded to by Captain Oldfield, I herewith enclose an official letter from Colonel Greene, as officiating Mint Master (Appendix D.) authorising the construction of this number of machines. It further appears from Mr. Officiating Secretary Allen's letter to Mr. Secretary Bushby, dated Agra, 13th July 1848, (an extract from which forms Appendix E.) that the fact of such authority having been granted to me by Colonel Greene was well known to the Government of the North Western Provinces, and information thereof would no doubt have been readily granted to Captain Oldfield, had he requested it. You are so well aware of the circumstances attendant on the transfer of the supervision of my work to yourself, owing to the departure of Colonel Forbes for England, in December 1847, that I need not further allude to this matter.

7. In conclusion, I have to request that, in forwarding this letter to Government, you will at the same time take notice of the alterations introduced by me into the machines now constructing, and of which you have lately had an accurate account taken. As I have repeatedly stated to you, I never considered the twelve machines sent to Agra as perfect, but simply as an improvement on any then existing churkas; and since their dispatch I have spared no exertion to introduce all such additional improvements, as the experience of myself and others could suggest, into the machines now making up; and I trust that the Government may hereafter enable me, by placing the erection and first working of these machines under my sole charge, to prove that the expense incurred in these experiments has not been thrown away.

Iron Bridge Yard, Allipore,
19 September 1849.

I have, &c.
(signed) J. H. Mather, C. E.

MEMORANDUM OF ENCLOSURES.

- Appendix (A). Extract from Mr. Bell's Report, and Remarks thereon.
- Appendix (B). Extract from a Letter addressed to Mr. Bell, dated Calcutta, 30th March 1849.
- Appendix (C). Mr. Allen's Letter to Mr. Thornton, dated Agra, 13th September 1847, containing Report of Committee.
- Appendix (D). Colonel Greene's Letter, dated Calcutta Mint, 18th December 1847.
- Appendix (E). Extract from Mr. Allen's Letter to Mr. Bushby, dated Agra, 13th July 1848.
- Appendix (F). Memorandum on Cotton Machines, by Mr. T. H. Mather, dated Agra, 25th August 1847.

(signed) J. H. Mather, C. E.

Appendix (A.)

No. 28.

EXTRACTS, &c. from the Report of Mr. H. Hamilton Bell, on the Trials of Cotton-Cleaning Machines at Agra.

Mr. J. H. Mather's REMARKS.

1. "On the arrival at Agra of Mr. Mather, civil engineer, whose assistance, as scientifically and practically acquainted with machinery, had been engaged, his first attention was turned to the practicability of the adaption of the existing saw-gins to the cotton of this country, and when after repeated trials this was declared hopeless."

2. "Regarding Mr. Potter's churka, which Mr. Mather had brought up from Calcutta, the report says, 'This was regarded by all connected with the experiment with much complacency,

1. By this it would appear that Mr. Bell implies that I failed to accomplish what I attempted; I however most distinctly state that I neither superintended, took part in, or witnessed any trial of American saw-gins at Agra. I was repeatedly urged to do so by Mr. C. Allen, C. S., and by Mr. Bell, but always positively declined, being fully convinced from past experience in the Madras Presidency, that they were quite unsuited for the Agra cotton.

2. By reference to the report of the Committee (Appendix C.), assembled at Agra, by order of the Lieutenant-governor, on the 25th of August 1847, for the purpose of testing

Extracts, &c. from the Report of
Mr. H. Hamilton Bell—continued.

Mr. J. H. Mather's Remarks—continued.

I.
Bengal and
North Western
Provinces.

complacency, as it was neither more nor less than the native churka assumed to be improved by more skilful manufacture."

testing Mr. Potter's machine, which I had brought up from Calcutta, it would appear from para. 7 that the said Committee were by no means disposed to regard Mr. Potter's machine with complacency, for, as stated in the report (Appendix C.), "the wool turned out by the machine was not so free from seed as that turned out by the native churka," and I was requested to alter the machine in such a manner as I thought best; in effecting this alteration, so complete a change was made in the most important part of the machine (viz., the diameter of the rollers), and such additions were likewise made to it, that it was in reality a new machine, the frame and driving wheels being the only remaining parts of the Potter churka. When the Committee at Agra first met on the 25th of August 1847, I handed to them a memorandum explanatory of the native construction, and dimensions of the Potter machine (a copy of this memorandum is attached hereto, Appendix F.), and in the 6th, 7th, and 8th paras. I detailed my objections to this machine, and pointed out what would in my opinion constitute an effective cotton-cleaning machine. At the second meeting of the Committee, on 2d September 1847, the altered, or as it may be called, the new machine, was exhibited (*see* paras. 9, 10, 11, and 12 of the Committee's report, Appendix C.); it therefore appears from their report, that it was this machine, and not Mr. Potter's as brought up from Calcutta, that the Committee regarded with complacency.

3. "The machines sent up from Calcutta by Mr. Mather to Agra, in December 1848, are spoken of in the report as 'a brush and iron grating attached to the Potter churka,' and the use of the brush is said to be that of 'cleaning and opening out the cotton after it passed through the rollers.'"

alluded to, with the exception of the wooden roller having been increased a quarter of an inch in diameter, this having been found absolutely necessary in order to admit of an iron spindle being passed through the roller; and I would leave it to any party who saw my machine, together with Mr. Potter's and others, exhibited in September 1848, in the Metcalfe Hall, to say whether "a brush and fan attached to the Potter churka," is either a fair or correct description of my machine. It is moreover well known to all who have examined the machines while at work, that "cleaning and opening out the cotton after it passed through the rollers" is a most important description of the functions of the brush, the chief and most important use of which is the clearing of the cotton from off the rollers, and preventing its clogging, and ultimately requiring to be picked off with the hand, the machine being stopped for the purpose. Mr. Bell appears throughout his report entirely to have overlooked this most important service performed by the brush, as well as the all-important necessity of adapting the diameters of the rollers to the description of cotton to be cleaned, and must surely have retained a very imperfect recollection of Mr. Potter's machine when he thus compared it with mine.

4. "If by inexpensive machinery 12 of these could be kept in regular motion for a day's work of 12 hours, so that the out-turn would be 300 lbs. per day, more or less, I should have been disposed to say that he had solved the problem of the description of machine which might be advantageously employed in this country for freeing cotton from its seed."

5. Regarding the erection of the cleaning house and my machines at Agra, Mr. Bell states, "This has been accurately done by Mr. Mackenzie."

3. In my reply to Extract 2, and reference to Appendix C. and F., I have shown the difference which existed between Mr. Potter's machine and the rough one made up by me at Agra, and tried on the 2d September 1847; and I have only here to state that the machines despatched to Agra in December 1848 were in all important points similar to the rough one above referred to. I still assert that by proper management the 12 machines driven by a common wooden bullock mill will turn out upwards of the weight of cotton here named by Mr. Bell.

5. The arrangements made for the erection and trial of the machines at Agra are, in my opinion, the cause of the apparent failure that has taken place. I am decidedly of opinion, that had I been allowed, as was originally arranged, to return to Agra for

the purpose of erecting the machines, and setting them to work, the result of the trial would have been very different. I have no desire to depreciate the value of Mr. Mackenzie's services, but in justice to myself I am bound to state, that from what I saw of his work while at Agra, and from the fact of his never having served a mechanical apprenticeship, having come to Agra as an assistant in a general provisioner's establishment, I do not consider him competent to set up new machinery, or to arrange speed pullies and gearing. Moreover, by a private letter from Mr. Bell, I am informed (and this is not mentioned in the report), that in addition to mine, two other machines constructed for a similar purpose were submitted to a comparative trial with mine, and that one of these machines was made by Mr. Mackenzie, who, on this account alone, should, I conceive, not have been selected to set up my machines.

6. "Whilst completing all necessary arrangements, repeated trials have been made singly, or with a few churkas, but in these the largest result obtainable has not passed 12 lbs. as a product of a day of 12 hours. This seems to me to determine that we have not so adjusted the churkas, or managed the power, as to avail of their capability to the fullest determined extent."

7. "The trial of the 25th of May was attended with great disadvantage of the gearing having become loose and out of order by a change of the wind to the east during the preceding night, after it had been well set up, which necessitated the adjustment of the leathern straps, and after all these worked imperfectly, and, in fact, would not work at all in some cases."

of trial was incapable of performing the work assigned to him, as by the exercise merely of common sense he should have been able to have tightened all the straps, and made them work properly, whichever way the wind might blow; but it appears that not one strap was working properly at the time of trial, and that some did not work at all; under these circumstances it is strange that Messrs. Bell and Oldfield thought fit to record the out-turn of the machines, and that they did not adjourn the trial till the straps were properly fitted.

8. "The bullocks were estimated to travel at the rate of two miles per hour. Four pair were employed, but it was not ascertained how much of their power was exhausted in putting the rather heavy machinery, which originally was made use of for working the American saw-gins, in motion, or how much was superfluous."

9. "In my opinion, the number of revolutions of the rollers resulting from the existing machinery turned by bullocks driven at this pace, would be quite inadequate to the effectual working of the churka, and though Mr. Mather's scientific mechanical knowledge might probably remedy this easily, I feel myself bound to express my opinion that bullock power with the machinery in use

6. I do not consider that these trials ought fairly to have been made before the machines were finally erected; the arrangements, when said to be complete, appear, by the trial of the 25th of May, to have been most sadly deficient; what, then, may they be supposed to have been when these previous trials took place?

7. Mr. Bell does not here specify what he includes under the term of gearing; a practical engineer would, in this case, understand it to mean the cogged wheels of the bullock mill used on the occasion, but on these the east wind could surely have had no effect, and this leads me to suppose that the term refers solely to the leathern straps; if this be the case, it clearly proves that the party in charge of the machines at the time

8. I am at a loss to understand why this machinery, which Mr. Bell calls rather heavy, but which I consider far too heavy, was made use of for this purpose, as there is another lighter set of bullock machinery at Agra already erected in the saw gin house, which might have been used for driving these machines. On the 30th of March last, having heard that this heavy machinery had been selected, and was being erected, I wrote a demi-official letter to Mr. Bell (an extract of this letter forms Appendix B.), expressing my opinion that this machinery was too heavy for working my machines.

9. From a perusal of this extract, it might be supposed that I had sent up the bullock machinery used at the trial; but this is not the case, as may be seen by reference to Extract 8, where Mr. Bell speaks of it as having been used for working the American saw gins. The bullock machinery referred to was formerly sent from England, and reached Agra with the American planters, about

Extracts, &c. from the Report of
Mr. H. Hamilton Bell—continued.

Mr. Mather's Remarks—continued.

I.
Bengal and
North Western
Provinces.

use as sent up, will not produce the results expected by Mr. Mather, and that in this respect the experiment has failed."

about seven years ago, and was subsequently used by them at Hattrass.

In my reply to Extract 8, I have stated that this is not the only bullock machinery which was available, or the most suitable, at

Agra for the trial, and I have further to state, that with the appliances already at Agra, any practical mechanical engineer could set the machines to work. As to the number of revolutions to be given to the rollers, I have always declined giving any positive opinion on the subject, this being one of those points on which I could only form a correct opinion after having set the machines to work myself, not in Calcutta, but in a cotton district, where the kupas would come fresh to the machines, and where well-practised feeders could be obtainable. It must, however, be clearly understood that I do not consider that the presence of either myself or any other mechanical engineer will be requisite at the erection and starting of every set of my machines, for when the most desirable speed and arrangement has been ascertained from one set, all future sets which may be dispatched can be so constructed as to speed, gearing, &c., that any village smith or carpenter will be able to erect them.

10. At the trial, on the 5th of July last, Mr. Bell writes regarding a native churka to which he had added a third standard:

"It was manifest that this high working velocity cannot be maintained with the native churka fitted with a driving wheel, the vibration resulting from the extremely rapid revolutions of the rollers, considerably above 1,000 times a minute in the iron one, having so sensible an effect in one short trial as to render one doubtful if the churka would stand to the end of it. Cast-iron standards, however, would be little costly, and these and the substitution of brass, in which the iron endless screw should move, in the place of the wooden one on which it now works, would, by greater durability and less friction, afford a very effectual machine at a very trifling expense. The result of these trials appears to me to have completely established that the 'Mather' churka is not the improved form of that machine which it is desirable to follow, and that the common churka with a driving wheel far exceeds it in efficiency with the suggested improvements. I imagine the cost of a churka would not exceed 10 rupees."

10. Captain Oldfield mentions in his report that this trial of the 5th of July lasted only one quarter of an hour, and from Mr. Bell's report, it seems that even this short time was almost too long for the native churka with a driving wheel attached, even though a third standard had been attached to it; he therefore recommends the introduction of brass and iron, instead of wood, in some parts of the machine; these substitutions, together with the driving wheel attached, render this no longer the native churka, but a new machine. The effect of the changes suggested by Mr. Bell will render the machine precisely similar to those I am now constructing for the Government, with the exception of the brush (which Mr. Bell leaves out, but which I still consider to be decidedly essential to the proper working of the machine), and the introduction of two multiplying wheels (between the driving wheel and the roller) to increase the speed of the latter. As to the use of brass for the screw on the wooden roller, I myself suggested this to Mr. Bell in a private letter, two or three months ago, mentioning that I was introducing it into the machines now constructing. Mr. Bell's estimate of ten rupees is perfectly erroneous; a machine such as he describes cannot be made in India under thirty-five rupees, and at this rate only in a Government workshop.

(signed) J. H. Mather, C. E.

(True extracts.)

(signed) J. H. Mather, C. E.

Iron Bridge Yard, Allipore,
17 September 1849.

Appendix (B.)

EXTRACT from a Letter from J. H. Mather, Esq., C. E., to H. Hamilton Bell, Esq., Agra, dated Calcutta, 30 March 1849.

No. 29.

I have already told you how anxious I was to have been allowed to set up the machine myself, and that I would on no account have undertaken the manufacture of machines for the North Western Provinces, had I not been assured that I should return to Agra at the public expense to erect them there. Mr. Simms, moreover, officially stated to the Government here, in December last, that he thought it was much to be regretted that I was not

I.
Bengal and
North Western
Provinces.

allowed to proceed to Agra with the machines; and I was subsequently told by Sir H. Maddock, the late Deputy-governor, that had he understood the matter rightly in the first instance, I should have accompanied the machines. I do not doubt for a moment your earnest desire to give the machines fair play, but there are certain adjustments which may very probably have to be made when this first set of machines is put to work, which none but a practised mechanic will probably observe till it is too late, and mischief has been done. I might mention, for your guidance, that it will be advisable to make two wooden frames to place under each line of machines, somewhat similar to the wooden frame supplied by Messrs. Jessop & Co. for the standard of the main shaft, each frame being made of timber not smaller than four inches by three inches and 17 feet in length. These frames, after being nailed or bolted to the floor, should be very accurately levelled on the upper side by means of a long straight edge and spirit level. The machines can then be bolted on to the frames, and the whole will be found to be level. I find that, with the machines which I am now making up here, these frames are of great service in working a number of machines, and that they are almost as essential as the bed plate to a steam engine. I may also mention, that I have some reason to believe that Jessop & Co's pullies will be found too heavy for the work, and that it may be requisite for you to substitute for them lighter ones. There are, I believe, some lighter shafts of iron in the Custom-house at Agra which may be suited for this work. On to these shafts you might key solid wooden pullies of one foot diameter, which any of your carpenters could easily make. I now send you a sketch of the building, on which I have marked the position in which these shafts and pullies, if found requisite, might be placed. I also send a memorandum on the subject for your reference. In the machines now making here, I am introducing cast-iron brackets, for carrying a line of shafting behind the line of machines, these brackets being bolted on to the longitudinal wooden frames above alluded to, on which the machines are placed. This arrangement avoids the necessity of fixing brackets into the wall or beneath the floor, and insures the line of shafting being true with the driving pullies of the machines, all being fixed on the same bed. You allude in your last letter to the bullock gear formerly used at Hattrass for the saw gins. I remember the different parts of the same well; but though it is complete and efficient machinery, you will probably find it too heavy for your present purpose, and it will require more bullocks to drive it than would be requisite with the simple wooden gearing which I propose for the purpose.

(True copy.)

(signed) J. H. Mather.

Appendix (C.)

No. 30. From C. Allen, Esq., in Charge of Cotton Experiments, North Western Provinces, to J. Thornton, Esq., Secretary to Government North Western Provinces; Agra, 13 September 1847.

Revenue Department,

Sir,

I HAVE the honour, in reply to your letter of the 29th of July, No. 387 A., to state, for the information of his Honour the Lieutenant-governor, that I requested Major Pillans, commissary of Ordnance, Captain Oldfield, executive engineer, and Captain Weller, of the Engineers, to unite with Mr. Hamilton Bell and myself in superintending experiments for testing the instruments for cleaning cotton brought up by Mr. Mather.

2. All these gentlemen most readily assented, and, with the exception of Mr. Bell, prevented by other business, we met at noon on the 25th of August, Mr. Mather having informed us that he would be ready to show the machine on that day.

3. The proceedings were opened by reading the 7th para. of your letter, directing me to call a committee, and Mr. Mather presented a Memo. (Enclosure, No. 1), which we directed should be appended to the proceedings.

4. Mr. Mather also laid upon the table a plan for working 12 gins by one power, and explained the mode he proposed to work 12 of the machines described in his Memo. No. 1.

5. After examining the plan, the committee proceeded to inspect the machine.

At 22 minutes to one, P.M. the machine was set in motion to clean 72 rupees' weight of seed cotton, which was cleaned at two minutes past one. The cotton wool weighed 30 rupees, and the seed 42 rupees; total, 72 rupees.

At 16 minutes before one, P.M., a native churka was set to work with the same weight of seed cotton (72 rupees); the wool separated from its seed by 29 minutes past one, and weighed 30 rupees, while the seed weighed 46 rupees; total, 76 rupees. The four rupees gain in weight was obtained partly by some of the seed getting mixed with dirt, and partly, possibly, by overweight having been given at first.

6. The machine thus cleaned the cotton at the rate of 15-16ths of a seer of clean cotton in an hour, while the native churka cleaned at the rate of 8-16ths of a seer in an hour.

7. The

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 413

I.
Bengal and
North Western
Provinces.

7. The wool turned out by the machine was not so free from seed as that turned out by the native churka. Several trials were made with similar results, and, in consequence of hints thrown out for alterations in the machine, the committee adjourned, to allow Mr. Mather to make some specified changes, and any others that might suggest themselves to him.

8. The same committee, with the addition of Mr. Bell, met again at noon on the 2d of September, Mr. Mather giving in a second Memo. (Enclosure No. 2.)

9. The committee determined specially to try the alteration mentioned in the 4th para. of Mr. Mather's second Memo., namely, the reduction of the size of the wooden roller to $1\frac{1}{4}$ inch diameter; in other words, to the average size of the wooden roller in ordinary native churkas, considering that this alteration was the one most in accordance with their ideas of what was required.

10. At five minutes to one the machine was set in motion, and in eight minutes (that is, by 11 minutes to one) a pound of seed cotton was cleaned. At five minutes to one a native churka was set in motion with the same weight, or 1 lb of kupas, which was cleaned by 10 minutes past one. The quantities given, namely, $9\frac{1}{2}$ oz. of seed and $6\frac{1}{2}$ of cotton wool, were very nearly equal in both cases.

11. In these trials the wool was equally well separated from the seed by both machines, and the alteration of decreasing the size of the wooden roller was found to answer perfectly.

12. The trials thus gave a rate of $7\frac{1}{2}$ lbs. or $3\frac{1}{2}$ seers of seed cotton in the hour to the machine, and 4 lbs. or 2 seers of kupas to the chuika. Divide the weight of seed cotton by three, the usual proportion of wool in each case, and we have $1\frac{1}{4}$ seer in an hour for the machine, against two-thirds of a seer for the chuika, or a very small fraction more than half.

13. The weight of seed cotton has been taken as showing more nearly the probable power of the instruments, for the produce of clean cotton wool was larger than ordinary, on account of the "kupas" having been picked, and being particularly good.

14. The committee adjourned at 10 minutes past three, to allow Mr. Mather to make arrangements for calculating the power necessary to work each of the instruments, and for other improvements.

15. The committee, with the exception of Mr. Bell (unavoidably absent), met again on the 9th instant, and Mr. Mather exhibited the machine (as altered at the second meeting), with a "brush" attached in the manner described in the 7th para. of Mr. Mather's Memo. No. 1.

16. The brush whirled away the wool, and took it off the rollers as perfectly as it does from the saws in the American "saw-gin." This second alteration, or rather addition, answered perfectly, and it may be fairly expected that dust, leaves, and other foreign matter will thus be separated from the wool.

17. An attempt was now made to calculate the power necessary to work one machine at the desired velocity. Accurate results were not obtained (as has been more particularly described by the engineer officers on the committee); but I think it may fairly be calculated that 32 lbs. would suffice to work at the desired velocity one machine, including the friction of the three-foot diameter wheel by which it was set in motion.

18. Major Pillans, Captain Oldfield, Captain Weller, and Mr. Bell, have each made most valuable remarks on the experiments (they form Enclosures Nos. 3 to 6), and I have little to add.

19. All the members recommend that Mr. Mather be allowed to proceed to Calcutta to make up 12 machines and the "thrasher," as they consider the invention well worth a trial, in the way and to the extent recommended by Mr. Mather.

20. Mr. Mather having been made acquainted with Captain Oldfield's recommendation that he should work in connexion with Colonel Forbes at the Government foundry, has requested me to state that he would prefer this arrangement to working independently, and has begged me to press the suggestion on the notice of his Honour.

21. I should, in conclusion, state that Mr. Mather has evinced great anxiety to exhibit the machine in all its details, and in the fullest manner. He has carried out with great zeal and energy the improvements thought of by himself, and those recommended by others.

I have, &c.

(signed) C. Allen,

In charge of the Cotton Experiments, North Western Provinces.

(True copy.)

(signed) J. H. Mather.

I.
Bengal and
North Western
Provinces.

Appendix (D.)

(No. 342 of 1847-48.)

No. 31.

From Major *G. T. Greene*, Officiating Mint Master, to *J. H. Mather*, Esq., Civil Engineer,
Fort Gloster Mills.

Dear Sir,

In reply to your letter of the 13th instant, I have to authorise you to construct the 12 cotton-cleaning machines at the Fort Gloster Mills, at the outside cost of 120 Company's rupees each; but as the executive engineer at Agra has calculated their cost to be 60 rupees each, I hope you will be able to effect a very great reduction in the cost of so large a number of articles of the same description, and moreover offer some reason for the great excess in your estimate beyond Captain Oldfield's.

Not having seen any of the machines, I am unwilling to give any opinion on the rates; but I shall be glad to see you, and concert with you as to some means of inspecting the machines, either at the manufactory or here.

I am, &c.
(signed) *G. T. Greene*,
Officiating Mint Master.

Calcutta Mint, 18 Dec. 1847.

(True copy.)

(signed) *J. H. Mather*.

Appendix (E.)

No. 32. EXTRACT from a Letter from *C. Allen*, Esq., Officiating Secretary to Government in the North Western Provinces, to *G. A. Bushby*, Esq., Secretary to the Government of India, Home Department; dated Agra, 13 July 1848.

Para. 5. Mr. Mather's proceedings in Calcutta were supervised by yourself, and also by Mr. Simms, as well as by Major Greene. On the official recommendation of the last-mentioned officer the construction at Fort Gloster of 12 machines at 120 rupees each was sanctioned, being in all 1,440 rupees. It was expected they would be ready early in the year, so as to be in time to be of service in the manufacture of last year's cotton."

(True copy.)
(signed) *J. H. Mather*.

Appendix (F.)

No. 33. MEMORANDUM Explanatory of the New Cleaning Machine for Cotton, and of the Alterations, &c., proposed to be made in the same, together with a Description of a Cotton "Thrasher."

1. THE new cleaning machine, as it at present stands, is simply a new mechanical arrangement for applying power to the common native "churka" already in use in all parts of India.

2. The machine consists of two rollers, one foot each in length, between which the cotton is passed to free it from the seed.

The upper roller is of "steel;" its diameter in the centre is $\frac{3}{8}$ ths of an inch, and it tapers slightly towards each end, the diameter of its extremities being half an inch and $\frac{1}{16}$ th. The lower roller is of hard wood of $2\frac{3}{8}$ ths inches in diameter throughout.

3. By means of a pinion and a spur wheel the power is so applied to the machine that, the upper roller performs $4\frac{1}{2}$ revolutions while the lower roller performs one.

4. The machine, as now exhibited, is worked by manual power applied to a "winch handle" to a "fly-wheel of three feet diameter, round the outside of which a leather strap is passed, connecting it with a pair of fast and loose pulleys of $6\frac{3}{4}$ inches diameter, which are keyed on to the same shaft as the pinion wheel above alluded to. This arrangement of working by manual power is, however, only temporary, and is made only in order to test the effect of the machine on the cotton; it is proposed eventually to bring together several of the machines (at least 12), and by means of a common shaft to drive them by the same power, either bullocks or steam;" and it is the decidedly expressed opinion of the inventor and manufacturer that it cannot be subjected to a fair trial, or that a correct estimate of its performance can be made out unless "at least 12 machines are worked together, and by some power other than hand."

5. The arrangement of the fast and loose pulleys above named will be found of great use in working the machine, as, in case of any stoppage being necessary (such as will often be

be the case, in order to clear away the seeds which may stick between the rollers), the man employed in feeding can, by means of a wrought-iron guide, the handle of which is always within his reach, transfer the strap from the fast to the loose pulley, thereby causing the instant stoppage of the machine. This will be found peculiarly advantageous when more than one machine are worked together, as the stoppage of one will in no way whatever interfere with the movements of the remainder.

6. The simplicity of the machine is such, and its resemblance to the common churka, to which the natives are accustomed, is so great, that there would probably be no difficulty in introducing it into general use, if such a course was considered desirable; there are, however, several alterations, &c., which may be applied with advantage to the machine as it now stands; three of the most striking are now named, but others no doubt may hereafter suggest themselves.

7. It is proposed to add to the machine a brush "wheel," similar to that of the "American saw-gin," for the purpose of clearing the cotton, as soon as it has passed through the rollers, of all dirt, pieces of leaf, &c. &c. This, which would be keyed on to the same shaft, on which the pinion wheel and three tullies are now fixed, and the length of its arms would be such as to allow the brushes while revolving to touch the wooden roller. The top and sides of the framework of the machine would be closed in with wood, and the cotton would be discharged in the same manner as from the saw-gin.

8. It is proposed to decrease the size of the wooden roller, giving it a diameter of only $1\frac{1}{2}$ inch; the object of this alteration being to prevent as much as possible small seeds from finding their way between the rollers, and being discharged in a broken state with the cotton. The size of the rollers is quite different in the native churkas in different parts of India; those now in the new machine are similar to the rollers used in the Guzerat district and other parts of the Bombay Presidency. In the Madras chuikas both rollers are of wood, and both of the same diameter, viz., about $3\frac{1}{2}$ inch. In the North Western Provinces, again, the wooden rollers somewhat resemble those of Guzerat, but are of smaller diameter. This difference of size, &c., is no doubt owing to the difference in the size of the seed in the respective districts; and it therefore now appears desirable to lessen the wooden roller, bringing it thereby more nearly to resemble the native chuika, as used in these provinces. A slight alteration is also proposed to be made in the bearings of the pinion wheel shaft, the necessity for which will easily be seen on an inspection of the machines.

9. The "thrasher" is intended to be used for the purpose of clearing cotton (after it has been separated from its seed) of all dirt, dust, pieces of leaf, &c., &c.

10. This machine will be found very useful for preparing for the English market cotton purchased from the native dealers which has previously been separated from its seed in the common native churka, as such cotton is often unfit (in the state in which it is purchased) for the English market, not from any deficiency in the length and quality of its staple, but on account of the dirt, pieces of leaf, stray seeds, broken seeds, &c. which it contains. The cotton has hitherto been partly cleared of this most objectionable trash, by beating it with sticks on rattan frames; but the only method as yet used for completely clearing it has been the very laborious process of hand-picking. It is therefore most desirable to introduce machinery for effecting this purpose.

11. In America the "thrasher" has only lately been known, and it is not in general use for this purpose, the cotton being mostly separated from its seed by the "saw-gin," the "brush wheel" of which machine performs the operation of clearing the cotton of the trash.

12. If the above proposed addition of a "brush wheel" (similar to that of the "American saw-gin") be made to the new cleaning machine, as pointed out in the explanation of that machine, the whole process of separating the cotton from its seed and of clearing it from trash, will be performed by one operation, and for cotton so cleaned the thrasher will not be required.

13. A rough model of the thrasher is now exhibited, which, though in an unfinished state, will give a better idea of the machine than a written description of its formation can convey.

Agra, 25 August 1847.

(signed) J. H. Mather,
Civil Engineer.

(True copy.)

(signed) J. H. Mather.

I.
Bengal and
North Western
Provinces.

EXTRACT from a Despatch from the Government of India, to the Honourable the Court of Directors in the Home Department; dated 21 December (No. 47 of 1850).

Completion of Mr. Mather's cotton-cleaning machines, and their distribution. Cost of the machines in excess of the estimated amount. Mr. Mather's departure from the country, leaving unpaid the wages of his establishment.

Home Cons. 8th February 1850, Nos. 18 to 33; 10th May 1850, Nos. 21 to 23; 23d May 1850, Nos. 12 to 32; 31st May 1850, Nos. 5 to 7; 7th June 1850, No. 19; 14th June 1850, Nos. 10 to 13.

28. IN connexion with our despatches noted in the margin,* the papers forming this collection will inform your Honourable Court of the completion of the 96 cotton-cleaning machines, which Mr. Mather had been engaged to construct. They have been distributed as follows:

To the Government of Bengal	-	-	-	-	18
Ditto - ditto - Madras	-	-	-	-	2
Ditto - ditto - Bombay	-	-	-	-	10
Agricultural and Horticultural Society of Calcutta	-	-	-	-	1
					<hr/> 31
In store	-	-	-	-	65
					<hr/> TOTAL - - - 96

29. Notwithstanding the repeated declarations of Mr. Mather, the cost of these machines has, it will be seen, been very considerably in excess of the estimate of 60 rupees each.

EXTRACT from the Proceedings of the Honourable the President of the Council of India, in Council, in the Home Department, under date 8 February 1850.

No. 18. From *J. H. Mather*, Esq., Civil Engineer, superintending Government Cotton Experiments, to *William Grey*, Esq., Under Secretary to the Government of India, Home Department.

Sir,

I HAVE the honour to lay before you the following report regarding the progress of the cotton-cleaning machine work, and to request the instructions of Government thereon.

2. On commencing the manufacture of cotton-cleaning machines, I found the turning lathes and workshops (which had not been used for several months) in such bad repair and disorder, that I addressed Mr. Simms on the subject; and on his representation to Government, orders were issued to the Military Board, on the 25th November last, to allow me to indent on the superintendent of the Cossipore Gun Foundry for such turning-lathes and other appliances as I required. By this means, and by carefully repairing the tools of the yard, I have been enabled, though with some delay (on account of the superintendent of the foundry being unable at once to meet my requisitions) to bring the workshop into efficient working order, and the manufacture of the whole 96 machines is now proceeding simultaneously, as well as the construction of the cattle mills, &c., sanctioned by your letter of the 24th March last. The work has not, however, of late proceeded quite so quickly as I could have desired, and in order to ensure its more speedy completion, and to avoid the risk of its exceeding the estimated amount of 60 rupees for each machine, I now find myself obliged to solicit the attention of Government to the following statement.

3. On my first receiving instructions to carry on my work, and to take up my residence in the Iron Bridge Yard, the manufacture of bridges had been abandoned for upwards of 12 months, the foreman of the yard had been removed to the Mint, and the superintendent of the bridge department (Lieutenant Douglas) had just received a superior appointment at Ajmere.

4. I was informed by Lieutenant Douglas, previous to his departure, that the only Government work which, for several months, had been carried on in the yard, had been the making of a few iron wheels for the Ganges Canal, and the repairing of sluice gates for the fort, but that the free use of the yard had been allowed to the late foreman for carrying on a private business of his own. I then represented to Mr. Bushby (then Secretary to the Government of India), that, as I anticipated difficulties with workmen if there was a division of authority in the yard, I was prepared to undertake the charge of any occasional work that the Military Board might send to the yard during the time occupied in the manufacture of

* No. 56 of 1848, dated 21st October; No. 23 of 1849, dated 28th July, pp. 15 and 16; No. 28 of 1849, dated 10th October, pp. 18 to 20.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 417

I.
Bengal and
North Western
Provinces.

of the cotton-cleaning machines. Mr. Bushby assured me that he would take steps to have the whole of such work placed under my charge till a new superintendent should be appointed by Government, or the manufacture of bridges be resumed. I am not aware what official steps Mr. Bushby took in the matter, as he shortly afterwards left Calcutta, but I know that he wrote privately on the subject to Colonel Garstin, as a member of the Military Board, as well as to Captain Fraser, garrison engineer, who is temporarily in charge of the yard. Colonel Garstin afterwards informed me that, as there was no work whatever just then in hand in the yard, there was no occasion for any further arrangement.

5. Within the last three months, however, sundry work in experimental roofing has been carried on in the yard by orders, I believe, of the Military Board, and the workmen have been placed under the charge of the former foreman of the yard, who is now employed in the Mint, and is consequently only present here occasionally, and then not till after four o'clock in the afternoon. Two independent authorities in a workshop, as well as elsewhere, never work well; and in the present instance the disadvantages are greatly increased by the fact of a body of native workmen being left for seven or eight hours daily without any control.

6. The above arrangements have caused much delay and inconvenience to me in the prosecution of my work; the workmen above alluded to come in and go out whenever they choose; while in the yard they are constantly smoking and idling their time. I often find them seated at a distance from their own work in the workshops where my work is going on, talking to my workmen, and causing them also to leave their work; I have endeavoured in vain by speaking to them to keep them away. I uniformly receive abusive replies, and am told that they are not my servants. On leaving the yard in the evening, they refuse to allow my durwans to search their clothes, as is the custom in all public and private workshops in Calcutta; and to this latter cause I am inclined to attribute several petty thefts of brasswork which have lately taken place from the cotton machines.

7. My workmen, who were formerly quite contented, have of late constantly troubled me with complaints that the same license is not allowed to them as to coming in and going out, &c., and I have had the greatest difficulty in keeping them to their work. I should not, however, have troubled Government with a reference on this matter, had I not ascertained that the Military Board have ordered a considerable quantity of wheels, &c., for the Ganges Canal, to be made up in the yard, and as this work, if conducted under similar supervision, will tend greatly to increase the disadvantages to my work, as above enumerated, and as, under such circumstances, it will probably be out of my power to complete my work within the estimated amount, I would respectfully suggest that arrangement might be made to place the charge of such work in my hands as long as I may continue in the yard, which would not only enable me to complete the cotton machines rapidly, and for a less sum than the estimated amount, but, from the fact that I reside on the premises, and am here all day, would also insure a more effective supervision of the work alluded to than any party, however talented, can give whose other engagements prevent his attendance here during the working hours.

8. Colonel Sage, the superintending engineer of division, through whom the order for admitting me in the first instance into the yard, was transmitted by the Military Board, lately visited the yard officially, and noticed the difficulties above alluded to, with which I have to contend, and has since assured me that he is prepared to substantiate my statements on the subject.

9. With regard to my qualifications for taking charge of the construction of ironwork, I would refer to the 14th para. of Mr. Simms' report to Government on that subject, dated Calcutta, 7th August 1848, addressed to Mr. Bushby, Secretary to the Government of India.

10. In conclusion, to avoid the chance of any misapprehension on the subject, I would distinctly state that I seek no addition to my present salary, and that my sole reason for making this application is that I may be enabled to complete the new cotton-cleaning machines within the estimated amount, in a manner satisfactory to Government and creditable to myself.

Iron Bridge Yard, Allipore,
2 June 1849.

I have, &c.
(signed) J. H. Mather, C.E.
Superintending Government Cotton Experiments.

(No. 356.)

From W. Grey, Esq., Under Secretary to the Government of India, to the Military Board.

No. 19.

Gentlemen,
I AM directed, with advertence to Mr. Secretary Halliday's letter, No. 1056, dated the 25th November last, to which no reply has been received, to forward in original the accompanying communication submitted to the Government by Mr. Mather, and to request that
296—Sess. 2. 3 G your

I.
Bengal and
North Western
Provinces.

your Board will have the goodness to report, for the information of the President in Council, whether the arrangement suggested by Mr. Mather can be carried into effect without inconvenience or detriment to the public service.

Council Chamber, 8 June 1849.

I have, &c.
(signed) *W. Grey*,
Under Secretary to the Govt. of India.

The return of the enclosure is requested with your reply.

(No. 2728.)

No. 20. From the Military Board to Major-General the Honourable Sir *J. H. Littler*, G.C.B., President of the Council of India in Council, Home Department; dated Fort William, 20 July 1849.

Honourable Sir,

WITH advertence to the General Order by the Governor-general, General Department, Simla, dated 25th October 1842, we have the honour to annex copy of our Secretary's letter, No. 2729, dated this day, and to state that there was a difference of opinion in our Board with reference to the 2d para., which is in reply to the 2d para. of Superintending Engineer, South Eastern Provinces, letter No. 452 of the 5th June 1849, an extract of which is annexed.

2. The majority of our Board in this question is formed by Lieutenant-colonel Garstin and Lieutenant-colonel Hawkins, and the minority, Lieutenant-colonel Mactier, suggested that the following should be written in substitution of the 2d paragraph:

"With reference to your 2d para., and the inconvenience already experienced in the Iron Bridge Yard from different parties being allowed to work there together under different superintendence, as described in the 3d para. of the civil architect's letter to your address, No. 16, of the 14th ultimo, I am directed to request you will inform Captain Fraser that Mr. Harvey and his workpeople must not be employed in the yard during the time Mr. Mather may be employed there by the orders of Government."

The letter as originally written was despatched under the orders of the majority.

We have, &c.
(signed) *F. S. Hawkins*, Lieut.-Col.
E. Garstin, Lieut.-Col., Com.
W. Mactier, Lieut.-Col.

(No. 2729.)

From Captain *E. W. S. Scott*, Secretary to the Military Board, to the Superintending Engineer, South Eastern Provinces.

Sir,

I HAVE the honour to acknowledge the receipt of your letter, No. 452 of the 5th June 1849, and, with reference to the subject of your communication, I am directed by the Military Board to express their regret that Captain Fraser did not report to you his having permitted the officiating chief engineer to occupy a vacant space in the iron-yard for the purpose of making experiments with iron for roofing.

2. With reference to your 2d para., I am directed to remark, that the responsible situation that Mr. Harvey holds at the Mint is a sufficient guarantee for his conduct and character; and the Military Board can see no objection to the civil architect's availing himself of Mr. Harvey's professional knowledge of practical mechanics.

Fort William, Military Board Office,
20 July 1849.

I have, &c.
(signed) *E. W. S. Scott*,
Secretary.

EXTRACT of a Letter, No. 452, dated 5th June 1849, from the Superintending Engineer, South Eastern Provinces.

Para. 2. THE practice of permitting Mr. Harvey to work at the yard, since his removal from that establishment, is also very objectionable, in my opinion; and as his workpeople, I am informed, invariably interfere with those employed by Mr. Mather, I beg that the Board will in future interdict Mr. Harvey's presence in the yard, and that of his workpeople, without their special sanction, to be communicated through this office to the officer in charge of the Iron Bridge Yard.

(True copy and extract.)

(signed) *E. W. S. Scott*, Captain,
Secretary.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 419

(No. 2248.)

From the Military Board to Major-General the Honourable Sir J. H. Littler, G.C.B., President of the Council of India in Council, Home Department; dated Fort William, 27 July 1849.

I.
Bengal and
North Western
Provinces.
—
No. 21.

Honourable Sir,

We have the honour to acknowledge the receipt of Under Secretary, Government of India, Mr. Grey's letter, No. 356, of the 8th June 1849, forwarding in original a communication from Mr. Mather, and requesting our Board to report, for the information of your Honor in Council, whether Mr Mather could be placed in charge of the Iron Bridge Yard, at Allipore, without inconvenience or detriment to the public service.

Dept. P. W.

2. In the last para. of Mr. Officiating Secretary Halliday's letter, No. 1056, of the 25th November, we were requested to report on the same subject, which was then mooted at the recommendation of Mr. Simms.

3. In the concluding para. of letter No. 6614, dated 1st December 1848, our Board reported that there was no objection to the occupation of the dwelling-house in the iron-yard by Mr. Mather whilst the premises were vacant, and as a temporary measure; and that a report on the Iron Bridge Yard would shortly be forwarded, embracing the questions of the advantages of retaining the yard, and appointing a superintendent to it.

4. This report was submitted to your Honor in Council through the Military Department, in our despatch, No. 380, dated 11th May 1849, and entered fully into the question of the retention and abolition of the yard.

5. The majority of our Board recommended that the Iron Bridge establishment should be kept up on a proper footing, and the minority recommended that it should be abolished as a separate concern, and that it should be added to the Cossipore Foundry.

6. In a letter, dated 16th November 1848, Mr. Mather offered his services to our Board, during the time he might be occupied in making up the cotton machines, as an assistant to the civil architect in charge of the Iron Bridge Yard, on a salary of (200) two hundred rupees per mensem, in addition to the (400) four hundred rupees allowed to him by Government.

7. In reply, we asked Mr. Mather whether he was competent, from the simple data of length of span and width of roadway, to calculate and supply working drawings, in detail, of the several parts of an iron suspension bridge.

8. Mr. Mather, in answer, informed our Board that he did consider himself competent to make all necessary calculations, &c., but that he did not intend the extra salary he had named in his offer (200) two hundred rupees, to cover the responsibilities and labour that such calculations would require, and that he could not undertake them without devoting his whole time to the Iron Bridge work, which he could not do under his present engagement, and that the remuneration should be proportionate to the responsibility incurred; here the correspondence ceased. Copies of the letters, as detailed in the margin,* are annexed.

9. Our Board are not aware of the precise terms under which Mr. Mather has been employed to make up cotton machines for Government, or whether it was stipulated by Mr. Mather that he should have the free and sole use of the yard at Allipore.

10. The 5th para. of his report has reference to some experiments in iron roofing carrying on under the instructions of our colleague, Lieutenant-colonel Garstin, in his capacity of officiating chief engineer.

11. A small space in the yard is occupied, with permission of the civil architect, for the purpose of these experiments, and the officiating chief engineer has availed himself of the practical skill of Mr. Haivey during the hours he is not employed in the Mint.

12. An order for the manufacture of 100 pairs of wheels for the Ganges Canal works has been issued to the civil architect, and it is with reference to this work, and the supposed inconvenience its execution under the civil architect's orders and management might occasion him, that Mr. Mather has submitted his remonstrance.

13. The majority of our Board cannot conceive the necessity for a clashing of interests in so large a yard under one superintendent. Mr. Mather should understand that Captain Fraser is the head of the iron yard, and they respectfully suggest that Mr. Mather should be informed that every facility, short of clearing the yard of all other work, has already been afforded to him, and that he must not place himself in opposition to Captain Fraser, or interfere with any work which may be carried on in the yard under the orders of its superintendent.

14. The

* Letter, dated 16th November 1848, from Mr. Mather; Board's letter, No. 6357, dated 21st November 1848 to unto; Mr. Mather's reply, dated 26th November 1848.

I.
Bengal and
North Western
Provinces.

14. The majority of our Board are convinced that Captain Fraser will not interfere in any way with Mr. Mather, or with his work, and the yard is sufficiently extensive to admit of a much greater quantity of work than that at present contemplated, being carried on simultaneously, and without confusion.

15. With reference to the para. of the civil architect's letter quoted by our colleague Colonel Mactier in the 21st para., the majority of our Board would respectfully observe, that it seems to point out how obnoxious the conduct of Mr. Mather has been towards the civil architect since he has been permitted to work in the yard. Our Board have requested further explanation of this letter from Captain Fraser in a letter this day addressed to the superintending engineer, South Eastern Provinces, a copy of which is annexed.

16. Unwilling to delay the submission of the present report, we have not held it back until the reply is received, a copy of which will be submitted to your Honor.

17. The majority of our Board are of opinion that it would be inexpedient at the present time, when the question of the retention of the yard is under consideration, to make any alteration or new arrangements in its superintendence.

18. The majority also feel confident that, if the civil architect is permitted to make up the iron work now urgently required for the canals, the rates and outturn will afford additional proof that the Iron Yard should be kept up as a Government establishment.

19. Our colleague Colonel Mactier, who has recommended that the Allipore Yard should be done away with as a separate concern, believes it would be for the interests of Government, as Mr. Mather has already been placed in the Iron Bridge Yard, that the arrangement suggested by him in his letter dated the 2d ultimo, to the Under Secretary to the Government of India in the Home Department, should be carried into effect.

20. Colonel Mactier considers that nothing can be less desirable than that a second party should be permitted to carry on works of any kind in the yard at the same time with Mr. Mather.

21. Lieut.-colonel Mactier's views as to the inexpediency of employing two distinct parties under separate superintendence to conduct works in the yard at the same time, are, your Honor in Council will observe, borne out by the experience of the civil architect, who in the 3d para. of his letter, No. 16 of the 14th ultimo, to the address of the superintending engineer, South Eastern Provinces, says, "I, and I rather suspect Mr. Mather also, have for some time been aware how impossible it is for conflicting interests to work in the yard, and I may add that the trouble and annoyance I have been exposed to in consequence, though not patent to you or the Board, have been very considerable; as the simplest means therefore of solving the difficulty, I would suggest the transfer of this establishment to Mr. Mather, for he could then carry on his own and any work the Government might require, as a Government servant, on the understanding of his handing over any unfinished Government work to his successor, should one be appointed, and the yard be kept up, and in the event of its abolition he might be allowed moderate time to finish any works in progress; for under existing circumstances, I should really be glad to get rid of my charge, and it will I think be obvious to you, that the mixture of different working parties ought to prove quite as disagreeable to me as to Mr. Mather."

22. Captain Fraser's proposal, which has been recommended to the Board by the superintending engineer of the South Eastern Provinces, appears judicious, and to have been well considered, and as Lieut.-colonel Sage reports that Mr. Mather is prepared, in the event of the establishment being made over to him, as suggested by the civil architect, to give security for the property in store, Lieut.-colonel Mactier begs leave respectfully to recommend the measure to the favourable consideration of your Honour in Council.

23. Employing Mr. Harvey at all in the yard, who, it appears from Captain Fraser's letter above noticed, although a permanent servant of Government, was a competitor with Mr. Mather for a contract for the work alluded to in the 11th para. of this letter, appears to Lieut.-colonel Mactier very injudicious, for it could hardly have been expected that these rivals would work in harmony in the same shop, the result is described in the para. of Captain Fraser's letter quoted above, and in the same letter it is noticed that Mr. Harvey's workpeople refused to be searched, a practice which Lieut.-colonel Mactier believes should be adhered to in all such establishments.

24. The original enclosure is herewith returned.

We have, &c.
(signed) *F. S. Hawkins*, Lieut.-Col.
E. Garstin, Lieut.-Col., Com.
W. Mactier, Lieut.-Col.

From *J. H. Mather*, Esq., Civil Engineer, Superintending Government Cotton Experiments,
to Colonel *Garstin*, Chief Engineer, Fort William.

Sir,

IN accordance with your request, and in reference to the communication which I yesterday handed to you from Mr. Bushby, I have now the honour to state that I have received orders from the Supreme Government to manufacture a considerable number of cotton-
leaning machines

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 421

machines at the Iron Bridge Yard at Allipore, and to reside in the yard during their construction. I have undertaken this employment at a monthly salary of 400 rupees, with the understanding that I am at liberty to undertake any additional work that I may be able to meet with, provided that it in no way interferes with the construction of the cotton-cleaning machines.

2. After inspecting the yard, I find that, without the slightest hindrance to the work above alluded to, I should be able to carry on work to a considerable extent in the yard, and I am therefore desirous to offer my services to the Military Board as resident engineer at the yard, or assistant to the superintendent of bridges, at a salary of 200 rupees per month, and on these terms I am prepared to superintend all the current duties of the yard in the repairs and construction of bridge work, and the construction of wrought and cast-iron work of all descriptions, and to make my services generally useful in the department of the civil architect and superintendent of bridges.

3. The construction of cotton machines will probably occupy me for at least 12 months, and during that period I am prepared to bind myself to remain in the yard on the above-named terms, which, together with my allowance from the Supreme Government, would form a consolidated salary of 600 rupees per month; I am further prepared to undertake to remain in the yard after the expiration of 12 months, with the understanding that the arrangement may at any time be terminated by a three (3) months notice from either party. Should the Military Board, however, be prepared to offer me a competent salary independent of my allowance from the Supreme Government above alluded to, I am willing to engage my services to them for a period of three to five years.

4. I have of late been in private communication with Captain Fraser, garrison engineer, civil architect, and superintendent of bridges, and I believe I may state that the above proposed arrangements, so far as I am personally concerned, would quite meet his views for the short period during which he may be in charge, for I am led to understand that no circumstances will induce him to officiate after the operations of the yard become more extensive.

5. With regard to my qualifications for the office, I have to state that I was educated as a mechanical engineer in the extensive engineering works of Messrs. Mather, Dixon & Co., of Liverpool, of which house my father was the senior partner, and that I was subsequently engaged in charge of the locomotive department of two of the principal lines of railway in England. Since arriving in India, I have erected a considerable quantity of machinery, &c., in the Madras Presidency, and have for the last 18 months been engaged in the service of the Government North West Provinces making up cotton machinery. My work has from time to time been reported on to Government by Mr. F. W. Simms, c. e., consulting engineer to the Government of India, to whom I am enabled to refer you as to my general qualifications, &c. I can also refer to Captain Horsley, of the Madras Engineers, as to the works executed by me in that Presidency, as well as to Mr. Rushby, Secretary to the Government of India, who has already communicated with both Captain Fraser and yourself on this subject.

I have, &c.

(signed) *J. H. Mather, c. e.*

Superintending Government Cotton Experiments.

Hastings-street, Calcutta,
16 November 1848.

(No. 6357.)

From Captain *E. W. S. Scott*, Assistant Secretary, Military Board, to Mr. *Mather*.

Sir,

I AM directed by the Military Board with reference to your proffer of services as resident engineer, or assistant to the superintendent at the Iron Yard (contained in your letter to Lieut.-colonel Garstin, chief engineer, Fort William, dated the 16th current), to inquire whether you consider yourself competent, on the simple data of the required span and width of roadway for an iron suspension bridge, to calculate the proportions of the several parts, and to furnish correct working plans of the same, for the guidance of the yard.

I have, &c.

(signed) *E. W. S. Scott*,
Secretary.

Military Board Office,
21 November 1848.

I.
Bengal and
North Western
Provinces.

From *J. H. Mather*, Esq., Civil Engineer, Superintending Government Cotton Experiments,
to Captain *E. W. S. Scott*, Assistant Secretary to the Military Board.

Sir,

I HAVE the honour to acknowledge the receipt of your letter of the 21st instant (which was only delivered to me yesterday), in which you inquire whether I consider myself competent to calculate the proportions of the several parts of suspension bridges, when furnished with data as to the required span and breadth of roadway.

2. In reply to the above, I have to state, for the information of the Board, that I consider myself perfectly competent to undertake the above-named work; but at the same time I desire that it may be understood, that when I tendered my services to the Board, I simply offered to undertake the superintendence of the execution of the work in the yard, on the supposition that all designs for new bridge work would be furnished from other quarters. The important responsibility attached to the duties alluded to in your letter under acknowledgment is such, that the party undertaking the same ought to be in a position to devote his whole time thereto, and the remuneration should be proportionate to the responsibility incurred.

3. I have already explained (in my letter to Lieutenant-colonel Garstin, to which you refer), that at present my time and attention are partly occupied by other work for the Government of India, and I am, therefore, for the present, under the necessity of confining myself to the terms of engagement which I have already proposed, viz., the simple superintendence of the execution of the work in the yard. If the Board, however, are hereafter desirous to engage my entire services at a fair rate of remuneration, I shall be prepared to undertake the duties alluded to in your letter, in addition to the superintendence of the work in the yard.

1, Hastings-street, Calcutta,
28 November 1848.

I have, &c.
(signed) *J. H. Mather*, Civil Engineer,
Superintending Govt. Cotton Experiments.

(No. 2848½.)

From Captain *E. W. S. Scott*, Secretary to the Military Board, to the Superintending Engineer, South Eastern Provinces.

Sir,

WITH reference to the 3d para. of Captain Fraser's letter, No. 16, of the 14th ultimo, the Military Board request that you will call upon the civil architect to explain fully to what he alludes in stating that he and Mr. Mather were both aware how impossible it is for conflicting interests to work in the yard; and that the trouble and annoyance he (Captain Fraser) has been exposed to in consequence, though not patent to the superintending engineer and to the Board, have been very considerable.

2. The Military Board do not perceive how Mr. Mather's being permitted to perform his work in the yard should have produced conflicting interests, Captain Fraser being in charge of the yard, and its superintendent. On this point, information is required.

3. They also wish to be informed precisely of the trouble and annoyance to which the civil architect has been exposed since Mr. Mather has been permitted to work within the yard.

4. With reference to Mr. Mather's complaint, that the workpeople in the yard refused to be searched before quitting the premises, the Military Board wish that it should be explicitly stated whether they were searched under the standing orders of the yard, by the head man employed by the civil architect.

5. An early reply to this letter is requested.

Military Board Office,
27 July 1849.

I have, &c.
(signed) *E. W. S. Scott*,
Secretary.

(True copies.)

(signed) *E. W. S. Scott*, Captain,
Secretary.

(No. 484.)

No. 22. From *F. J. Halliday*, Esq., Secretary to the Government of India, to the Military Board.

Gentlemen,

I AM directed to acknowledge the receipt of your letters noted in the margin,* reporting on the question of vesting Mr. Mather temporarily with the superintendence of the Iron Bridge Yard.

Home Department,
* No. 2728, dated
20 July; No. 2848,
dated 27 July.

2. In reply, I am desired to state that it appears to the President in Council, that if it can be done without great inconvenience or hindrance to public business, it would be desirable while Mr. Mather's contract lasts (which will not be much longer), to leave him to work entirely

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 423

entirely undisturbed in the yard, no other parties being sent there. The experiments in iron roofing may, the President in Council considers, well be postponed till Mr. Mather has finished his cotton-cleaning machines, which it is expected he will soon do; and his Honor in Council would wish also that your Board should consult with Captains Fraser and Broome as to whether the casting of the wheels for the Ganges Canal might not be entrusted to the superintendent of the Cossipore foundry.

3. This arrangement will, of course, be understood to be subject to such determination as the Government may hereafter come to regarding the permanent use of the Iron Bridge Yard; and in any case, as soon as Mr. Mather has finished the cotton-cleaning machines now under construction, he will be required to vacate the yard.

Council Chamber,
18 August 1849.

I have, &c.
(signed) *F. J. Halliday*,
Secretary to the Government of India.

I.
Bengal and
North Western
Provinces.

From *J. H. Mather*, Esq., Superintending Government Cotton Experiments, to *W. Grey*, Esq.,
Under Secretary to the Government of India, Home Department.

No. 23.

Sir,

I HAVE the honour to request that the sub-treasurer may be authorised to advance, on my receipts, a further sum of two thousand Company's rupees (2,000 Company's rupees), on account of the new cotton-cleaning machines now in course of completion.

Iron Bridge Yard, Allipore,
21 July 1849.

I have, &c.
(signed) *J. H. Mather*, c. e.
Superintending Govt. Cotton Experiments.

(No. 474.)

From *W. Grey*, Esq., Under Secretary to the Government of India, to *J. H. Mather*, Esq.

No. 26.

Sir,

IN reply to your letter, dated the 21st ultimo, I am directed to inform you that the sub-treasurer has been instructed to advance, on your receipts, a further sum not exceeding 2,000 rupees, in such proportions as you may from time to time require, on account of the cotton-cleaning machines in course of completion.

I am directed to request that you will be good enough to report what progress you have made in the work, and within what period you expect that the whole number of machines will be completed.

Fort William,
11 August 1849.

I have, &c.
(signed) *W. Grey*,
Under Secretary to the Government of India.

From *J. H. Mather*, Esq., Civil Engineer, Superintending Government Cotton Experiments,
to *W. Grey*, Esq., Under Secretary to the Government of India, Home Department.

No. 27.

Sir,

I HAVE this day had the honour to receive your letter, No. 474, dated the 11th instant; and, in reply to your 2d para. of that letter, I have the honour to inform you that the construction of the cotton machines has proceeded as rapidly as circumstances have permitted; the construction of the entire number having been carried on simultaneously, no one set is yet entirely finished, but the whole are in a very forward state; the date of their completion must entirely depend on the arrangements which may be made by Government regarding the Iron Bridge Yard.

2. I have already explained to you in my letters of the 2d and 13th of June last, the nature of the hindrances which I have met with, and I would only here state that had the sole charge of the yard been under my control I could have had all my work completed in the course of September; but in consequence of the absence of due supervision over the establishment I have been unable to urge on the work as rapidly as I could have desired.

I.
Bengal and
North Western
Provinces.

3. Since last addressing you on this subject I have been called on by the superintending engineer South Eastern Provinces, on behalf of the Military Board, to explain some of the statements contained in my letter of the 2d June to your address, and after due examination that officer, as well as the civil architect (who is nominally in charge of the yard), have both reported to the Board that it is desirable that the arrangement suggested in paragraph 7 of my letter, above alluded to, should be carried into effect; should it be considered expedient by Government to sanction this arrangement, I should hope to have the machines completed early in November.

I have, &c.

(signed) *J. H. Mather*, C. E.,
Superintending Government Experiments.

Iron Bridge Yard, Allipore,
20 August 1849.

(No. 112.)

No. 28. From the Consulting Engineer to the Government of India and Director of the Railway Department, to *F. J. Halliday*, Esq., Secretary to the Government of India; dated Calcutta, 13 December 1849.

Sir,

I HAVE the honour to forward, in original, a letter addressed to me by Mr. Mather, who is now constructing the cotton-cleaning machines, and I would respectfully recommend that Government would be pleased to grant him one of the cottage saw-gins forwarded by the Court of Directors to this country for experiment, as suggested in his letter.

I have, &c.

(signed) *F. W. Simms*, C. E.

No. 29. Enclosure. From *J. H. Mather*, Esq., C. E., Superintending Government Cotton Experiments, to *F. W. Simms*, Esq., Consulting Engineer to the Government of India.

Sir,

HAVING heard from the Secretary of the Agricultural and Horticultural Society that the consignment of cottage saw-gins, forwarded by order of the Court of Directors to the Government of India, has reached Calcutta, I have the honour to request that you will have the kindness to forward my application to Government for one of these gins. This application is made with the view of cleaning a small quantity of short stapled "kupas," and of ascertaining the respective value of cotton cleaned by the cottage saw-gin and by the roller-gins which I am now constructing.

2. I am now preparing to have one or two sets of the new roller-gins at work about the end of the present month for your inspection, and should the above request be complied with the cottage-gin might also be worked at the same time.

I have, &c.

(signed) *J. H. Mather*, C. E.,
Superintending Government Cotton Experiments.

Iron Bridge Yard, Allipore,
12 December 1849.

(No. 793.)

No. 30. From *W. Grey*, Esq., Under Secretary to the Government of India, to *W. Seton Karr*, Esq., Under Secretary to the Government of Bengal.

Sir,

I AM directed to forward copy of a letter from Mr. F. W. Simms, Civil Engineer, dated the 13th inst., and to request that one of the saw-gins received from the Honourable the Court of Directors may be placed temporarily at the disposal of Mr. Mather, if it can be done without inconvenience.

I have, &c.

(signed) *W. Grey*,
Under Secretary to the Government of India.

Council Chamber,
21 December 1849.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 425

(No. 794.)

From *W. Grey*, Esq., Under Secretary to the Government of India, to *F. W. Simms*, Esq.,
Civil Engineer.

I.
Bengal and
North Western
Provinces.
No. 31.

Sir,

I AM directed to acknowledge the receipt of your letter, No. 112, dated the 13th inst., and in reply to state that Mr. Mather's application for one of the cottage saw-gins will be referred to the Government of Bengal. The President in Council desires me to request that you will be good enough to report for the information of Government what progress Mr. Mather has made in the constructions of the cotton-cleaning machines on which he is now engaged, and within what further period he expects that they will be completed. His Honor in Council observes that Mr. Mather stated in a letter to the Government, dated the 20th of August last, that he hoped to have the machines completed early in November.

Home Department.

Council Chamber,
21 December 1849.

I have, &c.
(signed) *W. Grey*,
Under Secretary to the Government of India.

(No. 40.)

From the Under Secretary to the Government of Bengal to *W. Grey*, Esq., Under Secretary
to the Government of India, Home Department; dated Fort William, 11 January 1850.

No. 32.

Sir,

IN reply to your letter, No. 793, of the 21st ultimo, I am directed by the Honourable the Deputy Governor to state that it has been ascertained that all the saw-gins were dispatched to the Upper Provinces on the 4th idem, with the exception of the one required for the Dacca farm, which has been also forwarded to its destination.

Revenue.

I have, &c.
(signed) *W. Seton Karr*,
Under Secretary to the Government of Bengal.

(No. 42.)

From *W. Grey*, Esq., Officiating Secretary to the Government of India, to *F. W. Simms*,
Esq., Civil Engineer.

No. 33.

Sir,

WITH reference to the first para. of my letter, No. 794, dated the 21st ultimo, I am directed to transmit the accompanying copy of a communication from the Under Secretary to the Government of Bengal, No. 40, dated the 11th instant.

Home Department.

Council Chamber,
17 January 1850.

I have, &c.
(signed) *W. Grey*,
Officiating Secretary to the Government of India.

EXTRACT from the Proceedings of the Honourable the President of the Council of India, in
Council, in the Home Department, under date the 10th May 1850.

From *A. H. Blechynden*, Esq., Deputy Secretary to the Agricultural and Horticultural
Society, to *W. Grey*, Esq., Under Secretary to the Government of India.

No. 21.

Sir,

THE Agricultural and Horticultural Society being desirous of possessing full-sized working models of all the cotton-cleaning machines known in practical use, with such others of improved sorts as may have been lately manufactured, I am desired by the Council to solicit that you will have the goodness to submit this its application to his Honor the President in Council, to be supplied with one of the machines which have been lately manufactured for Government by Mr. J. H. Mather, Civil Engineer, in order that it may be placed with other cotton-cleaning machines in the possession of the Society, for public inspection, in its rooms, in the Metcalfe Hall.

Metcalfe Hall, Calcutta,
6 May 1850.

I have, &c.
(signed) *A. H. Blechynden*,
Deputy Secretary A. and H. S.

I.
Bengal and
North Western
Provinces.

No. 22.
Home Department.

(No. 346.)

From *W. Grey*, Esq., Under Secretary to the Government of India, to the Military Board.

Gentlemen,

WITH reference to my letter, No. 309, dated the 26th ultimo, I am directed to request that you will have the goodness, on receiving charge of the cotton cleaning machines that will be delivered to you by Mr. Mather, to cause one of them to be placed at the disposal of the Agricultural and Horticultural Society, who will be advised accordingly.

Council Chamber,
10 May 1850.

I have, &c.
(signed) *W. Grey*,
Under Secretary to the Government of India.

No. 23.

(No. 347.)

From *W. Grey*, Esq., Under Secretary to the Government of India, to *A. H. Blechynden*, Esq., Deputy Secretary Agricultural and Horticultural Society.

Home Department.

Sir,
I AM directed, in compliance with the application submitted in your letter of the 6th inst., to inform you that the Military Board has been requested on receiving charge of the cotton-cleaning machines that will be delivered to them by Mr. Mather, to place one of them at the disposal of the Agricultural and Horticultural Society.

Council Chamber,
10 May 1850.

I have, &c.
(signed) *W. Grey*,
Under Secretary to the Government of India.

EXTRACT from the Proceedings of the Honourable the President of the Council of India, in Council, in the Home Department, under date the 23d May 1850.

(No. 288.)

No. 12. From the Under Secretary to the Government of Bengal to *W. Grey*, Esq., Under Secretary to the Government of India, Home Department; dated Fort William, 23 February 1849.

Judicial.

Sir,
IN continuation of Mr. Under-Secretary Seton Karr's letter, No. 40, of the 10th ultimo, I am directed by the Honourable the Deputy Governor of Bengal, to request that one more of Mr. Mather's cotton-cleaning machines may be supplied in addition to the four therein applied for.

I have, &c.
(signed) *J. W. Dalrymple*,
Under Secretary to the Government of Bengal.

No. 13.

From Messrs. *Eglinton & Co.* to the Secretary to the Government of Bengal, Fort William.

Sir,

WE have the honour to request that you will be good enough to obtain and transmit to us an order from Government, directing Mr. J. H. Mather of the Iron Bridge Foundry, Allipore, to manufacture for us a churka for cleaning cotton, on the principle of the one which lately obtained the prize, in imitation of which, we understand, that gentleman is now engaged in manufacturing several for the use of Government.

The churka we require is intended for a firm at Moulmein, who are desirous of making experiments in cotton of the growth of that country.

Calcutta, 14 April 1849.

We shall of course most willingly defray all charges.

We have, &c.
(signed) *Eglinton & Co.*

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 427

I.
Bengal and
North Western
Provinces.

(No. 331.)

TRANSFERRED to the Government of India, Home Department, for compliance.
By order of the Honourable the Deputy Governor of Bengal.

Fort William,
19 April 1849.

(signed) *W. Seton Karr*,
Under Secretary to the Government of Bengal.

(No. 268.)

From *W. Grey*, Esq., Under Secretary to the Government of India, to *W. Seton Karr*, Esq.,
Under Secretary to the Government of Bengal.

No. 14.

Sir,

WITH reference to the letter from Messrs. Eglinton & Co. transferred by your office Home Department. memorandum, No. 331, of the 19th instant, and herewith returned, I am directed to state, that Mr. Mather will be instructed to place six churkas at the disposal of the Government of Bengal instead of five, the number intimated in your letters of the 10th January and 23d February last, as likely to be required.

I have, &c.

(signed) *W. Grey*,

Under Secretary to the Government of India.

Council Chamber,
21 April 1849.

(No. 137.)

From the Consulting Engineer to the Government of India and Director of the Railway Department, to *F. J. Halliday*, Esq., Secretary to the Government of India; dated Calcutta, 4 April 1850.

No. 15.

Sir,

I HAVE the honour to forward in original the report of Mr. Mather, dated the 3d instant, to my address, on his progress during the last three months, with the 96 cotton-cleansing machines he is constructing for Government at the Iron Bridge Yard.

2. I beg to call to notice the end of the 1st para. of the said report, where it is stated that the work will be completed by the end of the present month, which will terminate the extension of time for that purpose sanctioned by the Honourable the President in Council, as stated in Mr. Under Secretary Grey's letter to my address No. 101, of the 8th February last, and consequently will terminate Mr. Mather's engagement with the Government.

3. I would also beg to request the decision of Government as to the disposal of the machines when completed, because if they are to be dispatched to distant places, it will be necessary to have them packed in cases to prevent injury; and if they are to be so appropriated, is it the will of Government that Mr. Mather shall procure (as he proposes in the 3d para. of his report) the necessary packing cases? The total cost of the 97 cases, together with the packing, he estimates at 231 rupees. It is proper I should state, that I do not think the making of the cases and packing the machines can be finished during the present month, and therefore if Mr. Mather be desired to do this additional business, he will have to be retained a week or two, probably a month longer in Government employ, but if this work is to be done I think it would be preferable to entrust it to him rather than another, because he will for his credit's sake have it done in the most careful manner.

4. I would also solicit the attention of Government to the request of Mr. Mather in his 4th para. to be informed if "it is the intention of Government to avail themselves of his services for the erection of any set or sets of the machines in the cotton districts," a course which I took the liberty of recommending in my letter to Mr. Grey, dated Cossipore, 20th September last.

5. Mr. Mather's present engagement with Government will cease upon the completion of the said 96 machines, and I would beg, as requested by Mr. Mather, respectfully to ask the favourable consideration of Government to the application in his 5th para. for continued employment in their service.

6. Should it be determined to defer sending the machines away for the present I shall be much obliged if Government will appoint some person to take charge of them when completed, as it will be impossible for me to do so, because I have no control or business in the Iron Bridge Yard, where they are being constructed, and have no place under my charge wherein to deposit them for safe keeping.

I have, &c.

(signed) *F. W. Simms*, C.E.

I
Bengal and
North Western
Provinces.

From *J. H. Mather*, Esq., Civil Engineer, Superintending Government Cotton Experiments
to *F. W. Simms*, Esq., Civil Engineer, Consulting Engineer to the Government of India.

No. 16.
Enclosure.

Sir,

I HAVE the honour to forward the following report of my work for the last quarter :—
Since writing to you on the 14th January last, the construction of the cotton-cleaning machines has proceeded rapidly; the only interruption has been caused by the number of workmen who have been detained from their work by the small-pox, which has been, and still is, raging in this neighbourhood, but notwithstanding this hindrance I still look forward to the final completion of the work this month, in accordance with the statement contained in the 9th para. of my letter of the 14th January last to your address.

2. You are already aware that I have had only one lathe here in which the rollers of the machines could be turned; had it not been for this circumstance the whole eight sets of machines would have been completed before the present time; very little work except the rollers now remains unfinished, and I have made arrangements for obtaining the use of two other screw-cutting lathes from private parties for the present month, in order to ensure the completion of the work as above specified.

3. I take the present opportunity to remind you that packing cases for the machines will be required previous to their despatch from Calcutta; their cost as per margin* may be estimated at 231 rupees, and if this expenditure be sanctioned I can have the packing cases made up during the present month.

4. In anticipation of the immediate completion of my work I would request your attention to the 7th para. of my letter of the 19th September last, wherein I expressed a hope that the Government would entrust the erection and setting to work in the cotton districts of the machines to my charge in the first instance; I in the same letter pointed out that had this been done in the case of the machines sent to Agra, the result of the trial would have been very different; I need not now repeat the reasons urged in my letter of 19th September, but I would request you to inform me whether it is the intention of Government to avail themselves of my services for the erection of any set or sets of the machines in the cotton districts, as suggested in the letter above alluded to, and to what districts it is intended to despatch the machines.

5. Should it not be the intention of Government to avail themselves of my services in the manner above suggested, I would take this opportunity of requesting you to forward to Government my application for employment in any other department where my services might be found useful. You have had constant opportunities of noticing my work during the last two years and four months, and I trust that from your observations during that period you will consider yourself justified in recommending me for further employment under Government.

I have, &c.

(signed) *J. H. Mather*, C.E.

Iron Bridge Yard, Allipore,
3 April 1850.

Superintending Government Cotton Experiments.

(No. 377.)

No. 17. From the Under Secretary to the Government of Bengal to *W. Grey*, Esq., Under Secretary to the Government of India, Home Department; dated Fort William, 9 April 1850.

Sir,

Revenue.

I AM directed by his Honor the Deputy-governor of Bengal, to request that should his Lordship in Council see no objection thereto, 12 of Mr. Mather's cotton-cleaning machines, or as many as may be available, may be placed at his Honor's disposal to meet an application made by the Commissioner of the Tenasserim Provinces on behalf of a Mr. Darwood, of Moulmein.

I have, &c.

(signed) *W. Seton Karr*,

Under Secretary to the Government of Bengal.

	Rs.	a.	p.
*Ninety-six packing cases for machines at 2 rupees	192	—	—
One ditto for shafting and pullies	3	—	—
Charges for packing 97 cases, and painting directions, at 6 annas	36	—	—
	<u>Rs. 231</u>	—	—

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 429

(No. 308.)

From *W. Grey*, Esq., Under Secretary to the Government of India, to *F. W. Simms*, Esq.

Sir,

I AM directed to acknowledge the receipt of your letter, dated the 4th instant, with its original enclosure from Mr. Mather, reporting the progress made by him in the construction of the 96 cotton-cleaning machines at the Iron Bridge Yard.

2. As by this time the work has probably been completed, I am directed to request that you will have the goodness to instruct Mr. Mather to have 10 of the machines packed immediately, for despatch to the Government of Bombay, and two for despatch to the Government of Madras. These are all that need be packed at present, and the remaining 84 machines are to be made over to the Military Board, who will be instructed to receive charge of them from Mr. Mather.

3. The President in Council does not consider it necessary to retain Mr. Mather's services for the purpose of putting up the machines at the places where they are to be used, and Mr. Mather's employment under Government will cease therefore with the transfer of the machines to the Military Board. His Honor in Council will of course expect to receive, with such remarks as it may appear to you to call for, an accurate account of the true cost of the 96 machines which have now been made up by Mr. Mather, including every item of expenditure which has been incurred on account of the work, excepting only the salary drawn by Mr. Mather himself.

4. By the latest accounts laid before Government it appears that Mr. Mather, up to the end of 1849, had drawn from the general Treasury the sum of 6,000 rupees, and in addition to this the Military Board have submitted a statement, showing a debit against Mr. Mather, to the amount of Rs. 4,147. 6. 8., of which Rs. 1,750. 4. 4. would seem to be for actual work done, and Rs. 2,397. 2. 4. for lathes and other articles supplied to Mr. Mather. These lathes his Honor in Council presumes are to be returned into store, but the usual charge for wear and tear should be debited against Mr. Mather's machines. This account from the Military Board does not appear to include any charges for coal, coke, and other stores, which it is apprehended Mr. Mather has received from the Iron Bridge Yard.

Council Chamber, 26 April 1850.

I have, &c.
(signed) *W. Grey*,
Under Secretary to the Government of India.

(No. 310.)

From *W. Grey*, Esq., Under Secretary to the Government of India, to *W. Seton Karr*, Esq., Under Secretary to the Government of Bengal.

Sir,

IN reference to the letters from your office, of the dates noted on the margin *, as also to Mr. Under-Secretary Grey's letter to Mr. Seton Karr's address, dated the 21st April 1849, I am directed to acquaint you that the cotton-cleaning machines ordered to be constructed under Mr. Mather's superintendence having been completed, or very nearly so, the Military Board have been instructed to receive charge of them, and to comply with any indents which the Government of Bengal may make; 18 machines have been applied for by the Deputy-governor, 10 by the Government of Bombay, and two by the Government of Madras, which will leave 66 in store available for further demands. Home Department.

Council Chamber, 26 April 1850.

I have, &c.
(signed) *W. Grey*,
Under Secretary to the Government of India.

(No. 290.)

From *W. Grey*, Esq., Under Secretary to the Government of India, to Sir *H. C. Montgomery*, Bart., Chief Secretary to Government of Fort St. George, and No. 291, *J. G. Lumsden*, Esq., Secretary to Government of Bombay.

Sir,

I HAVE the honour to inform you that Mr. Mather's cotton-cleaning machines having been completed, the President in Council has directed $\frac{\text{two}}{\text{ten}}$ of them to be packed for despatch to your address, agreeably to the request contained in $\frac{\text{your}}{\text{Mr. Dep. Sec. Erskine's}}$ letter, dated the $\frac{\text{17th April 1848.}}{\text{25th March 1848.}}$ Home Department.

I am

430 PAPERS RELATING TO MEASURES TAKEN SINCE 1847.

I.
Bengal and
North Western
Provinces.

I am directed to state, that 66 of Mr. Mather's machines will remain in store; and should the Government of Fort St. George therefore require any larger number than that already indented for, they can be furnished on application.

Fort William, 26 April 1850.

I have, &c.
(signed) *W. Grey,*
Under Secretary to the Government of India.

(No. 292.)

No. 21. From *W. Grey, Esq.,* Under Secretary to the Government of India, to *R. Thornton, Esq.,* Assistant Secretary to Government, North Western Provinces.

Home Department. Sir,
MR. MATHER having brought to completion the cotton-cleaning machines ordered to be constructed under his superintendence, I am directed to inquire if the Honourable the Lieutenant-governor would wish that any of the machines should be despatched for use in the Agra Presidency; after complying with the indents which have been already made, 66 of the machines will be left in store.

Fort William, 26 April 1850.

I have, &c.
(signed) *W. Grey,*
Under Secretary to the Government of India.

(No. 309.)

No. 22. From *W. Grey, Esq.,* Under Secretary to the Government of India, to Military Board.

Home Department. Gentlemen,
I AM directed by the President in Council to acquaint you, that the cotton-cleaning machines ordered to be constructed by Mr. Mather having been completed, or very nearly so, a communication has been made through Mr. Simms, directing Mr. Mather to make over 84 of the number to your Board. The receipt of these you will have the goodness to report to my office.

2. Your Board are requested to attend to the wishes of the Government of Bengal, in respect to any number of the machines that may be required by that Government.

Council Chamber, 26 April 1850.

I have, &c.
(signed) *W. Grey,*
Under Secretary to the Government of India.

(No. 142.)

No. 23. From *F. W. Simms, Esq.,* Civil Engineer, to *W. Grey, Esq.,* Under Secretary to the Government of India; dated Calcutta, 3 May 1850.

Sir,
UPON the receipt of your official letter, No. 308, of the 26th ultimo, I sent a copy to Mr. Mather, with directions to carry out the orders of Government contained therein.
In reply, I yesterday received a letter from him, dated 6th instant, informing me that his work is not yet quite completed; but that Mr. Mather may have the opportunity of speaking for himself, I send herewith his letter in original.

I have, &c.
(signed) *F. W. Simms, C. E.*

No. 24.
Enclosure.

From *J. H. Mather, Esq., C. E.,* to *F. W. Simms, Esq., C. E., &c. &c. &c.,* dated Allipore, 1 May 1850.

Sir,
I HAVE the honour to acknowledge the receipt of your letter of yesterday's date, enclosing a copy of Mr. Under Secretary Grey's letter (No. 308), of the 26th ultimo, to your address.

2. I have this day made arrangements for making up the 12 packing cases required for machines ordered to be sent to Madras and Bombay; they will, I expect, be ready, and the machines packed by the 12th instant, and I shall be obliged by your informing me to whom I should make them over for shipment.

3. I have also applied to the secretary to the Military Board to make arrangements for receiving back into store the turning lathes which were lent for my work, and to fix the amount

amount with which I am to be debited for their use ; as soon as this is done I shall be able to close the final accounts, and to hand them over to you.

4. Of the 96 machines, 68 are now complete, and three more will be completed to-day. These have all been set to work cleaning seed cotton. In the remaining 25 machines, 17 steel and seven wooden rollers with screws are still deficient, but at the rate at which I have turned out the work during the last month, the whole work will be completed by the time that the machines for Madras and Bombay, as above noted, * are ready for despatch. I would here state that the whole of the machines would have undoubtedly now been completed, as promised in my former letters, had it not been for the great difficulty experienced in getting the roller screws cut ; † Captain Broome was obliged, by a press of work at the Cossipore foundry, to take away from me the use of a screw-cutting lathe, formerly at work for me ; two other lathes for the use of which I had concluded arrangements when I last addressed you, viz., one in the mathematical instrument maker's department, and another belonging to a Mr. Madge, a workman in the Mint, have both been since found unsuited (not having the proper pinions) for cutting the exact pitch of screw which was required. I have thus had three screw-cutting lathes less than I had every reason to anticipate at work. I have at present the lathe you formerly saw in this yard, and another belonging to Mr. Turner's sugar works at Cossipore, cutting screws ; both these lathes I hired (as I formerly explained to you) at my private expense, and no charge has been or will be made to Government on account of them. As you are already well aware of the nature of this screw-cutting work, and the necessity of a peculiar description of lathe being used for the purpose, I trust that you will at once perceive that the delay has been unavoidable on my part. I would also mention, that from a knowledge that the work here was about to cease, my workmen (particularly the best of them) have shown great indifference as to their attendance during the past six weeks, and have, in many instances, sought and obtained work elsewhere ; in two cases men who were employed at the screw-cutting lathes, I have been obliged to seek the aid of the magistrate to bring them back to their work, and altogether, though I have been striving to the utmost of my ability to hasten the completion of the work, I have met with serious difficulties.

5. While making the above statements, however, I still desire to act up to the promises I have made, as far as I am able to do so, and I therefore hereby mention, that I shall not draw any salary for the portion of the present month during which I am employed in closing the work, neither shall the Government be called on to pay any further sum whatsoever, either for materials or wages ; I feel that I owe this in support of my own reputation, both with the Government and the public.

6. I hope to address you again regarding the machines in the course of a few days, when I send in the final accounts.

I have, &c.
(signed) *J. H. Mather.*

(Appendix A.)

COPY of Letter received from Captain *A. Broome*, Superintending Cossipore Foundry, dated 5 April 1850.

My dear Sir,
HAVING a number of indents to complete this month, which closes the official year, I am sorry to say that I cannot spare the self-acting lathe for the screws you require, and therefore am obliged to return the rollers sent to-day per bearer.

J. H. Mather, Esq., Allipore.

Yours, &c.
(signed) *Arthur Broome.*

(No. 336.)

From *W. Grey*, Esq., Under Secretary to the Government of India, to *F. W. Simms*, Esq.

No. 25.

Sir,
IN reply to your letter, No. 142, dated the 3d instant, I am directed to request that you will instruct Mr. Mather to make over to the Superintendent of Marine the 12 cases of cotton-cleaning machines, to be despatched to the Governments of Fort St. George and Bombay.

2. The President in Council has noticed Mr. Mather's intimation that he will draw no salary after the 30th ultimo, and that the Government will be put to no further expense for materials or wages during the additional time required by him to complete and deliver over to the Military Board the machines constructed by him.

Council Chamber, 10 May 1850.

I have, &c.
(signed) *W. Grey*,
Under Secretary to the Government of India.

I.
Bengal and
North Western
Provinces.

No. 26.

Home Department.

(No. 337.)

From *W. Grey*, Esq., Under Secretary to the Government of India, to Captain *T. E. Rogers*, Superintendent of Marine.

Sir,

MR. MATHER has been instructed to make over to you for shipment 12 cases, containing cotton-cleaning machines, intended for the Government of Fort St. George and Bombay. I am accordingly directed to request that on their receipt you will procure freight for the number of cases addressed respectively to the two ports, and forward to this office the bills of lading for the same.

Council Chamber, 10 May 1850.

I have, &c.
(signed) *W. Grey*,
Under Secretary to the Government of India.

(No. 341.)

No. 27.

Fort William, Home Department, 10 May 1850.

OFFICE MEMORANDUM.

THE Under Secretary in the Home Department has the honour to forward to the Financial Department, for information and for communication to the offices of Audit and Account, copies of the papers noted on the margin,* from which it will be seen that Mr. Mather's employment in the construction of cotton-cleaning machines ceased on the 30th ultimo.

(signed) *W. Grey*,
Under Secretary to the Government of India.

(No. 143.)

No. 28.

From *F. W. Simms*, Esq., C.E., to *W. Grey*, Esq., Under Secretary to the Government of India; dated Calcutta, 13 May 1850.

Sir,

I BEG to forward you in original a letter which I have this day received from Mr. Mather, respecting the cotton-cleaning machines.

I have, &c.
(signed) *F. W. Simms*, C.E.

No. 29.
Enclosure.

From *J. H. Mather*, Esq., C.E., to *F. W. Simms*, Esq., C.E., &c. &c. &c.; dated Allipore, 11 May 1850.

Sir,

IN continuation of my letter of the 1st instant, I have now the honour to call your attention to the 3d para. of Mr. Under Secretary Grey's letter, No. 308, of the 6th ultimo, to your address, from which it appears that Government decline acceding to my request, conveyed in my letter to you of the 3d ultimo, that I might be entrusted with the erection and setting to work of the first set of the new cotton machines that is dispatched by Government to the cotton districts.

2. As a servant of Government, it would, I am aware, be out of place for me to agitate this question any further. but as a mechanical engineer, and the inventor of a new machine which, though it may fall short of what may ultimately be produced, has been generally acknowledged as an improvement on existing machines of a like nature, and as such has been awarded their gold medal and a prize of 500 rupees by the Agricultural Society of India, I feel it incumbent on me to enter this my most respectful protest against the decision of Government in this matter. In my letter to you of the 19th September last, I fully stated my reasons for the request above alluded to, and from subsequent conversations which I have had with you on the subject, I am induced to believe that you coincide in the view which I take of the matter; viz., that the maker of a new machine cannot be held responsible for the efficiency of its performance unless an opportunity be afforded him of seeing it set fairly to work, and of then so regulating and adjusting it as circumstances may require. As, however, the President in Council has decided that my employment under Government

* From Officiating Secretary to Government of India to *F. W. Simms*, Esq., dated 8th February 1850. Extract from Mr. Mather's letter, dated 1st May 1850, p. 5. Extract from letter of Government of India to Mr. Simms, dated 10 May 1850, para. 2.

Government is to cease, without such opportunity being afforded to me, I desire simply to record that I cannot consider myself responsible for any failure that may attend the first setting to work of the machines, if the same be not entrusted to my supervision. I feel called upon to make this statement in order to protect my own reputation both here and with my friends in Liverpool and Manchester, who have expressed much interest in the experiments in which I have been engaged.

3. I take this opportunity most respectfully to submit a request that 12 of the machines, now about to be made over to the Military Board, may be lent to me by Government for a short time, for the purpose of trying some experiments in cleaning seed cotton, and of ascertaining the most desirable speed at which the machines can be worked, their out-turn, &c. &c. Though such experiments conducted in Calcutta cannot afford data of equal importance and certainty as would result from a trial in the cotton districts, it would nevertheless be a great satisfaction to myself, from the interest I have taken in the matter, and the large sum I have expended from my private purse on the present machines, to be allowed the loan of the 12 machines as above requested, it being, of course, clearly understood that the experiment is conducted solely at my private expense.

4. I have to request that you will forward the above application to Government as early as may be convenient to yourself, and in the meantime, till I receive a reply I shall only make over 72 instead of 84 machines to the Military Board, retaining the 12 machines till I receive further instructions.

I have, &c.
(signed) *J. H. Mather, C. E.*

NOTES by the Members of Government.

IT will be desirable, I think, in every point of view, that Mr. Mather should superintend the working of the machines in the first instance.

No. 30.

He may therefore be allowed the loan of the 12 as requested for an experimental trial, though he ought to have proved long ago.

The cotton districts, I believe, are in the Central Provinces, and if it is decided that a portion of the machines are to be sent there, it may be advisable, in order that the scheme be fairly tested and carried out, to send Mr. Mather with them to instruct the natives in the use of them.

Some other person, European or native, unconnected with Mr. Mather, might be sent to witness the operation, and to report the result to Government.

The time to be occupied on the trial should be limited. Mr. Mather, whilst he is employed, must of course be remunerated and his expenses to and fro paid, but as he would in all probability have only to proceed as far as Patna or Dinapore (if so far), the expense would not be much.

Unless this is done, the money that has been expended already upon these machines will have been thrown away uselessly.

It will at any rate be satisfactory to know whether they actually do answer the purpose for which they are intended, or if the whole scheme is to be pronounced a failure.

16 May 1850.

(signed) *J. H. Littler.*

I BELIEVE they are intended for Agra. I have seen plans of the machines, which are anything but clear.

Reserve. I have put the plans with the papers.

(signed) *F. Currie.*

MR. MATHER has not the gift of ubiquity, and cannot accompany all his machines to their several destinations. If they cannot be set up and worked at Agra, Bombay, Madras, or elsewhere, without Mr. Mather's actual personal superintendance, the whole affair may be considered little better than a hoax; but I hope, both for Mr. Mather's sake and our own, that it will prove otherwise.

We have no present use for all these machines, and I would let Mr. Mather have the use of the 12 he asks for a limited time, he undertaking to deliver them up in good order.

(signed) *J. Lewis.*

ON the introduction of a new machine, even among persons familiar with the use of machinery, it is of the utmost importance that it should be set up, and its early performance superintended by the makers of it.

The difference between success and failure often depends on minute details, which would appear trivial to one not thoroughly conversant with the subject. It does not at all follow, because Mr. Mather is anxious to witness the performance of those first set up, in order that he may be sure of their having fair play, and may himself observe if anything is wanting to them, and ascertain the most advantageous rate of speed, &c., that his presence will be always needed, and everywhere.

I.
Bengal and
North Western
Provinces.

Some years ago I put up a thrashing-mill on a new principle in Fife, where thrashing-mills are as common as churches are here; but the inventor thought it worth while to come from Glasgow to put it up himself,

(signed) *J. E. D. Bethune.*

(No. 362.)

No. 31.

From *W. Grey*, Esq., Under Secretary to the Government of India, to
F. W. Simms, Esq., C. E.

Home Depart-
ment.

Sir,

I AM directed to acknowledge the receipt of your letter, No. 143, dated the 13th instant, with enclosure, and, in reply, to state, that the President in Council authorises the loan to Mr. Mather of the 12 cotton-cleaning machines, referred to in his communication to your address, for experimental purposes.

Council Chamber, 23 May 1850.

I have, &c.
(signed) *W. Grey*,
Under Secretary to the Government of India.

(No. 363.)

No. 32.

From *W. Grey*, Esq., Under Secretary to the Government of India, to the Military Board.

Home Depart-
ment.

Gentlemen,

IN continuation of my letter, No. 309, dated the 26th ultimo, I am directed to acquaint you, that the President in Council has granted the loan to Mr. Mather of 12 of the cotton-cleaning machines, therein referred to, for experimental purposes.

Council Chamber, 23 May 1850.

I have, &c.
(signed) *W. Grey*,
Under Secretary to the Government of India.

EXTRACT from the Proceedings of the Honourable the President of the Council of India, in Council, in the Home Department, under date the 31st May 1850.

(No. 1969.)

No. 5.

From Captain *T. E. Rogers*, Superintendent of Marine, to *W. Grey*, Esq., Under Secretary to the Government of India, Home Department.

Sir,

I HAVE the honour to acknowledge the receipt of your letter, No. 337, dated the 10th instant, and to inform you, that, having received from Mr. Mather the 12 cases containing cotton-cleaning machines therein referred to, I have caused the 10 cases for Bombay to be shipped on the "Fuzul Rohomany," Captain Middleton, and the two cases for Madras on the Peninsular and Oriental Steam Company's steamer "Oriental," and I beg to forward to you herewith, for transmission to the authorities at Bombay and Madras, bills of lading for the cases in question.

Fort William,
Marine Superintendent's Office,
31 May 1850.

I have, &c.
(signed) *T. E. Rogers*,
Superintendent of Marine.

No. 6.

From *W. Grey*, Esq., Under Secretary to the Government of India, to Chief Secretaries to the Government, Fort St. George, No. 349, and Bombay, No. 348.

Home Depart-
ment.

Sir,

IN continuation of my letter, No. 290,* dated the 26th April last, I have the honour to forward the accompanying bill of lading for two † cases containing cotton-cleaning machines, shipped on the Peninsular and Oriental Steam Navigation Company's vessel the "Oriental." ‡

*291.
†ten.
‡board the "Fuzul
Rohomany."

Fort William, 31 May 1850.

I have, &c.
(signed) *W. Grey*,
Under Secy. to the Govt. of India.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 435

I,
Bengal and
North Western
Provinces.

(No. 1526 of 1850.)

From *J. Thornton*, Esq., Secretary to Government, North Western Provinces, to
W. Grey, Esq., Under Secretary to Government of India, Fort William.

No. 7.

Sir,
I AM directed to acknowledge the receipt of your letter, No. 292, dated 26 ultimo, and, in reply, to acquaint you, that this Government do not require any more of the cotton-cleaning machines therein referred to.

Head Quarters, 21 May 1850. I have, &c.
(signed) *J. Thornton*,
Secy, to Govt. N. W.P.

EXTRACT from the Proceedings of the Honourable the President of the Council of India, in Council, in the Home Department, under date the 7th June 1850.

(No. 691.)

From the Military Board to Major-General the Honourable Sir *John Hunter Littler*, G.C.B., President of the Council, of India, in Council, Home Department; dated Fort William, the 29th May 1850.

No. 19.

Honourable Sir,
IN compliance with the orders of Government, contained in Mr. Under Secretary Grey's letter, No. 346, of the 10th instant, for the supply of a cotton-cleaning machine to the Agricultural and Horticultural Society, we do ourselves the honour to report, for the information of your Honor in Council, that the Deputy Principal Commissary of Ordnance in charge of the arsenal has been instructed to place one at the disposal of that society.

Ordnance Department.

We have, &c.
(signed) *W. H. L. Frith*, Brigr. Comt.
F. S. Hawkins, Lt.-Col.
W. Mactier, Lt.-Col.

EXTRACT from the Proceedings of the Honourable the President of the Council of India, in Council, in the Home Department, under date the 14th June 1850.

(No. 807.)

From the Military Board to Major-General the Honourable Sir *John Hunter Littler*, G.C.B., President of the Council of India, in Council, Home Department; dated Fort William, the 3d June 1850.

No. 10.

Honourable Sir,
IN reply to Government letter in the Home Department, No. 309, of the 26th April last, regarding 84 cotton-cleaning machines under construction by Mr. Mather, we do ourselves the honour to report, for the information of your Honor in Council, that 72 of the machines in question have been received into the arsenal of Fort William, and 12 retained by Mr. Mather for experimental purposes, under the authority of the Government.

Ordnance Department.

2. Of the 72 machines in the arsenal, one has been issued to the Agricultural and Horticultural Society, and 18 reserved for the Government of Bengal, under authority.

We have, &c.
(signed) *W. H. L. Frith*, Brigr. Comt.
F. S. Hawkins, Lt.-Col.
W. Mactier, Lt.-Col.

(No. 152.)

From *F. W. Simms*, Esq., C.E., the Consulting Engineer to the Government of India, and Director of the Railway Department, to *W. Grey*, Esq., Under Secretary to the Government of India; dated Calcutta, 10th June 1850.

No. 11.

Sir,
I BEG to enclose the copy of a letter addressed by myself to Mr. Mather, No. 150, of the 5th instant, in compliance with the desire of his Honor the President in Council, as conveyed to me in your letter, No. 308, of the 26th April last; and also Mr. Mather's reply
296—Sess. 2. 3 I 2 (dated

I.
Bengal and
North Western
Provinces.

dated the 7th instant), thereto, enclosing his memorandum, which I called for, regarding his setting up of the new cotton-cleaning machines: both his letter and its enclosure I send in original.

2. It will doubtless be expected of me to remark upon this communication, as Mr. Mather's letter correctly describes it as "a very meagre document, for want of information on the all-important point of speed at which the machines are to be driven, the height from the ground at which they are to be placed, in order to ensure the proper current of air, or the most desirable power to be employed in driving them."

3. As respects the two first points named by Mr. Mather, I take it that, as they can only be settled by practical experiment, they can be arrived at in that way by any intelligent officer to whose care the working of the machines may be confided; and although I have formerly stated (and recommended) that it was desirable for Mr. Mather to set the first of his machines to work, yet that was chiefly with a view to ensure to them a trial under unquestionable circumstances, or rather to prevent him or others from complaining, in the event of any degree of failure, that his machines had not been done justice to.

4. As respects the third point named by Mr. Mather, as to "the most desirable power to be employed for driving the machines," I am surprised at his mooted such a question, because he has all along repeatedly stated that 12 of his machines could be, and were adapted to be, worked by a cattle mill, and he himself applied to Government, during my absence last year, for their sanction to erect such a mill, at a cost of 530 rupees, which was granted.—See your letter to Mr. Mather's address, No. 209, of the 24th March 1849.

I have, &c.
(signed) F. W. Simms, C. E.

(No. 150.)

No. 12.
(Enclosure.)

From F. W. Simms, Esq., Civil Engineer, to J. H. Mather, Esq., Iron Bridge Yard,
dated 5th June 1850.

Sir,

I BEG to call your attention to the 3d para. of Mr. Under Secretary Grey's letter to my address, No. 308, of the 26th April last, of which a copy was sent you, wherein it is said, "His Honor in Council will, of course, expect to receive, with such remarks as it may appear to you to call for, an accurate account of the true cost, &c. &c."

2. The remarks his Honor expects me to call for consist of a plain statement of the manner of setting up the machines for use, to be forwarded by Government with them, whereby an intelligent officer may set them to work at any part of the country: I take it that this will be no difficult matter; for if it were otherwise, such machines would not answer any useful purpose in a country like India. I have therefore to request you will have the goodness to supply such descriptions as I have named.

I have, &c.
(signed) F. W. Simms, C. E.
(True copy.)
(signed) D. C. Coomar.

No. 13.
(Enclosure.)

From J. H. Mather, Esq., C. E., to F. W. Simms, Esq., C. E., &c. &c. &c.,
dated Calcutta, 7th June 1850.

Sir,

I HAVE the honour to acknowledge the receipt of your letter, No. 150, of the 5th instant, informing me that the President in Council desires me to furnish "descriptive instructions" for the setting up of the cotton machines.

2. Though I have every desire to comply promptly with the above requisition of his Honor in Council, I fear that you will consider the memorandum which I now enclose to be a very meagre document, and of little use, if any, as far as the machines themselves are concerned, as it does not give any information on the all-important point of the speed at which they are to be driven, the height from the ground at which they are to be placed, in order to ensure the proper current of air, or the most desirable power to be employed for driving them. On these points, without practical local experience on the spot where the cotton is grown, and where consequently the "kupas" comes to hand in a fresh state, it is impossible for me to offer an opinion.

3. With regard to that part of your letter noted in the margin,* I would observe, that
(though

* "I take it that this will be no difficult matter; for if it were otherwise, such machines would not answer any useful purpose in a country like India." Extract from letter, No. 150, from F. W. Simms, Esq., to J. H. Mather, Esq., dated 5th June 1850.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 437

(though I am unable to send you the full particulars required) all the required information could be obtained in the course of three weeks' observation of one set of machines when properly erected and experimented on; and when once obtained, such information would be available for all similar machines, and might be so written out as to enable any officer, European or native, in any part of India, to set the machines to work.

4. I have, in conclusion, again to express my great regret that I have not been allowed to superintend the erection of the first set of machines; after having done which, I could have furnished full and complete descriptive instructions, according to your request.

I have, &c.
(signed) J. H. Mather, C. E.

I.
Bengal and
North Western
Provinces.

MEMORANDUM regarding the Setting Up of the New Cotton-cleaning Machines.

1. Not less than 12 machines should be erected in one cleaning-house, and a strong teak wood frame or bed-plate 28 feet × 2 feet should be provided for each set of machines, or to which the 12 machines would be bolted.

2. A shed, 30 feet × 12 feet broad × 7 feet high, with a 4-feet verandah on one side, should be erected as a cleaning-house: the sides of the shed, as well as the outer side of the verandah, should be inclosed with boards or mats.

3. The frame, or bed-plate, should then be placed on the floor of the shed one foot from the partition dividing the shed from the verandah, and parallel with the same, the frame being very carefully levelled, and the machines then placed thereon, and bolted down.

4. An iron shaft, 28 feet long × 1½ inch diameter, should be fixed by means of brackets or standards to the frame, on which shaft there should be 12 pulleys fixed, to correspond with the driving pulleys of the machines, and connected with them by leather straps; at the end of the shaft another pulley should be keyed on, to which the motive power would be conveyed by a strap from the cattle mill or other engine (as the case might be), which would occupy a distinct building.

5. From the back of each machine a wooden spout should be carried through the partition into the verandah room, through which the cleaned cotton would be discharged: the verandah room should be carefully closed in on all sides, and only opened once a day for the removal of the cleaned cotton.

Calcutta, 7 June 1850.

EXTRACT from a Despatch from the Government of India to the Honourable the Court of Directors, in the Home Department, dated 28th January, No. 5 of 1852.

20. The Military Board having represented to us that the 67 cotton-cleaning machines remaining in store in the arsenal of Fort William occupied space which could not conveniently be spared, and required constant attention to prevent their sustaining injury, we directed that they should be sold by auction.

Disposal of the cotton-cleaning machines remaining in the arsenal of Fort William. Home Cons., 18 July 1851, Nos. 14 and 15.

EXTRACT from the Proceedings of the Honourable the President of the Council of India, in Council, in the Home Department, under date the 18th July 1851.

(No. 5190).

From the Military Board to Major-General the Honourable Sir John Hunter Littler, G. C. B., President of the Council of India, in Council, Home Department; dated Fort William, the 18th January 1851.

Honourable Sir,

WITH reference to Government letter, in the Home Department, No. 309, of the 26th April last, directing the receipt into the arsenal of 84 cotton-cleaning machines, we do ourselves the honour to forward, for the information of your Honor, the accompanying copy of a letter, No. 2002, of the 28th ultimo, from the Deputy Principal Commissary of Ordnance, on the subject, and, with reference thereto, to solicit instructions for the disposal of the number (67) at present remaining in the arsenal, as it appears they occupy space which cannot be conveniently spared.

No. 14-
Ordnance Department.

Abstract.

Submit copy of a letter from the Deputy Principal Commissary of Ordnance, soliciting orders for the disposal of 67 cotton-cleaning machines remaining in the arsenal of Fort William.

I.
Bengal and
North Western
Provinces.

Letter No. 565, of
the 11th June, from
the Under Secre-
tary to the Govern-
ment of Bengal.

2. Referring to the original number of machines ordered into the arsenal (84), 17 have been issued under the orders of Government, as follows:—

- 1 to the Agricultural and Horticultural Society, per letter No. 346, of the 10th May 1850, from the Under Secretary to Government, Home Department.
1 to Commissioner, Assam.
2 to Commissioner, Arracan.
12 to Commissioner, Tenasserim Provinces.
1 to Mr. Marshall, No. 783, of 2 August, from Tenasserim Provinces.

17

Fort William,
18 January 1851.

We have, &c.
(signed) *W. H. L. Frith*, Brigr.-Comm.
F. S. Hawkins, Lt.-Col.
W. Mactier, Colonel.

(No. 2002.)

From the Deputy Principal Commissary of Ordnance in charge of the Arsenal,
Fort William, to the Secretary Military Board.

Sir,

REFERRING to your letter, No. 1026, of the 15th June last, I have the honour to request, that, as the cotton-cleaning machines, of which there are 67 remaining, occupy considerable space, and require constant attention, to prevent their sustaining injury while lying in store, you will be so good as to bring them to the notice of the Board, with a view to the disposal of them.

Fort William, Arsenal Office,
28 December 1850.

(True copy.)
(signed) *J. P. Beadle*, Offg. Secretary,

(No. 594.)

No. 15. From *A. R. Young*, Esq., Under Secretary to the Government of India, to the
Military Board.

Gentlemen,

Home Depart-
ment.

WITH reference to your letter, No. 5190, dated the 18th January last, I am directed by the President in Council to request that, after full advertisements in the Calcutta papers, your Board will have the goodness to sell by auction the 67 cotton-cleaning machines therein referred to.

Fort William, 18 July 1851.

I have, &c.
(signed) *A. R. Young*,
Under Secy. to the Govt. of India.

EXTRACT from a Despatch from the Government of India to the Honourable the Court of Directors in the Home Department; dated the 10th May, No. 24 of 1852.

16. The cotton-cleaning machines constructed by Mr. Mather having been put up for sale as authorised by us, and reported to your Honourable Court in para. 20 of our letter, No. 5 of 1852, dated 28 January, and the bid not having exceeded five rupees for each, we directed the Military Board to ascertain from the Commissary of Ordnance at Allahabad, if at that station, or at Mirzapore, a reasonable price could be obtained for the machines.

Inquiries directed to be made of the Commissary of Ordnance at Allahabad, if at that station, or at Mirzapore, a reasonable price could be obtained for Mather's cotton-cleaning machines. Home Cons., 28 Nov. 1851, Nos. 39 and 40.

No. 39.
Ordnance Depart-
ment.

EXTRACT from the Proceedings of the Honourable the President of the Council of India, in Council, in the Home Department, under date the 28th November 1851.

(No. 5343.)

Abstract.
States that the sale
of cotton-cleaning
machines in deposit
at the arsenal has
been postponed for
the low price in
Calcutta.

From the Military Board to Major-General the Honourable Sir *John Hunter Littler*, G. C. B., President of the Council of India, in Council, Home Department.

Honourable Sir,

WITH reference to Government letter in the Home Department, No. 594, of the 18th July last, authorising the sale of 67 cotton-cleaning machines in deposit at the arsenal, we do ourselves the honour to report, for the information of your Honor in Council, that, after full

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 439

I.
Bengal and
North Western
Provinces.

full advertisement in the Calcutta papers at intervals during the month of August last, the articles were put up for sale by Messrs. Mackenzie, Lyall & Co., and there being only one bidder at five rupees each, the auctioneers declined accepting the bid without further reference.

2. Under the circumstances of the very low price offered for the machines, our Board have ordered their sale to be postponed pending this reference; and we suggest that Captain Channer, Commissary of Ordnance at Allahabad, be instructed to make inquiries at that station and at Mirzapore, with a view to ascertaining if a higher price could not be obtained in that quarter, before disposing of them in Calcutta to such disadvantage.

Fort William, 6 November 1851.

We have, &c.
(signed) *S. Shaw*, Brigadier
F. S. Hawkins, Colonel.
W. Mactier, Lt-Col.

(No. 949.)

From *A. R. Young*, Esquire, Under Secretary to the Government of India, to
Military Board.

No. 40.

Gentlemen,

I AM directed to acknowledge the receipt of your letter, No. 5343 of the 6th instant, and in reply to state that the President in Council approves of your suggestion, and authorises you to ascertain from the Commissary of Ordnance at Allahabad, if at that station, or at Mirzapore, a reasonable price could be obtained for the cotton-cleaning machines ordered to be sold. Home Department.

I have, &c.
(signed) *A. R. Young*,
Under Secy. to the Government of India.

Council Chamber, 25 November 1851.

EXTRACT from a Despatch from the Government of India to the Honourable the Court of Directors, in the Home Department, dated the 8th April 1853, No. 22.

21. The authorities in Bombay having pronounced Mather's cotton-cleaning machine to be inferior to the native churka, the Government of that Presidency did not desire to have any further supply of them.

Mather's cotton-cleaning machine pronounced by the Bombay authorities to be inferior to the native churka. The machines in store ordered to be sold to the highest bidder at Calcutta, there being no chance of disposing of them either in the Allahabad or Benares district.

22. In para. 16 of our letter, No. 24 of 1852, dated 10th May, we informed your Honourable Court that the Military Board had been directed to ascertain if such of the machines as were in store could not be disposed of at Allahabad or Mirzapore on better terms than had been offered for them at Calcutta. The Military Board reported that there was no chance of disposing of the machines either in the Allahabad or Benares district; we therefore authorised their being sold by public auction at Calcutta to the highest bidder.

Home Cons., 5 Nov. 1852, No. 15 to 17; 29 Nov. 1852, No. 26, 21 Jan. 1853, Nos 27 and 28.

EXTRACT from the Proceedings of the Most Noble the Governor-General of India in Council, in the Home Department, under date the 5th November 1852.

(No 6389 of 1852.)

From *A. Malet*, Esquire, Chief Secretary to the Government of Bombay, to *J. P. Grant*, Esquire, Secretary to the Government of India

No. 15.

Sir,

I HAVE been directed to transmit for the purpose of being laid before the Most Noble the Governor-General of India in Council, extracts* of such portions of a memorandum drawn up in this office as refer to the cotton-cleaning machine† invented by Mr. Mather, and to intimate that the Right Honourable the Governor in Council does not require any more of them. Territorial Department, Revenue.

I have, &c.
(signed) *A. Malet*,
Chief Secy. to the Government of Bombay.

Bombay Castle, 14 October 1852.

* Paras 1 to 13

† See letters from the Government of India, Nos. 231 and 813, dated 4 March and 21 October 1848.

I.
Bengal and
North Western
Provinces.

EXTRACT of such Portions of a Memorandum drawn up in the Revenue Secretary's Office, as refer to the Cotton-cleaning Machine invented by Mr. Mather.

ON the 4th March 1848* the Government of India transmitted copies of certain papers respecting a new cotton-cleaning machine, or "improved Indian churka," invented by Mr. Mather, civil engineer, for the experimental cotton works in the North Western Provinces.

2. The machine is thus described by Mr. F. W. Simms, consulting engineer to the Government of India, and Director of the Railway Department, in his letter to Mr. Bushby of the 10th January 1848.

"1st. The original native machine for cleansing the cotton, called the churka, appears not to be badly adapted for the purpose, and with the alterations and additions proposed, and now being applied thereto by Mr. Mather, promises, in my opinion, to correct its defects and supply what is wanting to make it effectually answer; as it now stands it frees the cotton from the seeds effectually, but does not remove the bits of leaves and other trash which it contains, and which it is necessary to remove to render the article marketable. I would also notice that the four-threaded endless screw for driving the upper roller is an objectionable application.

"2d. The machine constructed at Manchester, which Mr. Mather called 'Mr. Potter's,' I have also seen: it has a defect which the native churka is free from, namely, the large size of the wooden roller, which allows of many of the seeds passing through them with the cotton (arising from the seeds varying in size); these mostly get crushed in the passage, and the oil, as I suppose, being liberated, stains a considerable portion of the cotton in which they have been crushed; besides this, the seeds are lost, and their fragments have also to be separated in addition to the before-named extraneous matter. The above is not the only defect in the machine; this arrangement of the screws, &c., for pressing down the upper roller is bad, and the bearings for the shafts are deficient.

"3d. The new arrangement of the churka now being made by Mr. Mather was lastly brought to my notice, and appears to be very important; the chief alterations are the following: a decrease in the size of the wooden roller to nearly the mean diameter of that in the native churka, which I expect will ensure a perfect disengagement of the cotton seeds without injuring them, so that they will all be available for further cultivation; also the introduction of a fan with brushes attached to its arms, and adjusted to touch the roller three-quarters of an inch below the line of contact of the two rollers through which the cotton passes, thus avoiding the shortening or tearing of the staples next the iron grid placed below the brush-fan, through which the dust and refuse fall away from the cotton; the boxing up of the machine and making it deliver the cleansed cotton into an adjoining room; and lastly, the introduction of weights for pressing down the upper roller instead of screws, &c.

S. O.

"I would also observe that the arrangement of the spur-wheel and pinion of the new machine for communicating motion is infinitely preferable to the endless screw of the original churka.

"With the above alterations and arrangements I expect that the machine will be found to answer all the purposes desired, but it would be advantageous if the Hon. the Lieutenant-Governor of the North Western Provinces would direct that a supply of the seed-cotton (or kupas), not less than three maunds, be forthwith remitted to Calcutta, to determine by actual experiment the real merits of the machine before it leaves the workshop, that any alteration, suggested thereby be made."

3. At the request of this Government † 10 of these machines were furnished by the Supreme Government, who intimated, in their letter of the 21st October 1848, No. 813, that Mr. Mather's machine had been tested and found to answer its purpose very well, so far as it was possible to judge from a merely experimental working; and in their subsequent communication of the 26th April 1850, that 66 of Mr. Mather's machines will remain in store, and should the Government of Bombay therefore require any larger number than that already indented for, they can be furnished on application.

See para. 1 of this
Memo.

4. Copy of the correspondence accompanying the letter from the Government of India of 4 March 1848, No. 231, and two of the machines, were sent to each of the places noted in the margin, ‡ with a request that the collectors would report as to their utility and their superiority or otherwise over the gins at work in their districts and the machines used by the natives.

5. The collector of Broach submitted to Government extract of a letter received from Mr. J. Sandon, to whom the machines in question were temporarily made over for trial by the late collector, Mr. Davies.

6. Mr.

* No. 231, Mr. Mather's cotton-cleaning machine.

† Government letter, No. 1725, dated 25th March 1850.

‡ Dharwar, Belgaum, Sattara, Khandesh, Broach.—Government letter, No. 4248-52, dated 24 May 1850.

6. Mr. Sandon stated that—"Para. 2. I have given one of the machines in question a fair trial, and as respects its mechanical construction, I consider it infinitely superior to the native churka, but as regards its efficiency as a cotton-cleaning machine, the latter is fully its equal in every respect, while the cost is as 30 to 1 against Mr. Mather's machine; the adoption of which, in my opinion, would only be attended with a useless and a wasteful expense.

"Para. 3. I may add that Mr. Mather's machine is merely a modification of a useless one which came out some years ago under the name of 'Glasgow churka.'"

7. The commissioner of Sattara forwarded to Government a letter, in which Mr. Vany, the superintendent of cotton experiments at that place, stated that "Mr. Mather's churka is unable to compete with the saw-gin, and is a very slight, if any, improvement on the native churkas."

8. The collector of Belgaum annexed the reports of Captain Wingate, Revenue Survey Commissioner, and of Messrs. Blount and Frost, the superintendent and engineer of the cotton experiments in the Southern Mahratta country, showing the result of the experiments made with that machine in their presence at Dharwar.

9. Captain Wingate stated that—"2d. Mr. Mather's machine is an adaptation of the native churka, and differing from it chiefly in having the motion communicated to the wooden roller by an iron pinion and spur-wheel, turned by a strap from a driving wheel; the small iron roller is worked by an endless screw; the machine is boxed in and fitted with a revolving brush, like the saw-gin, to blow the cotton away from the dust and deliver it from the end of the box. This machine Mr. Frost informed me cost about 80 rupees.

"3d. Mr. Mather's churka was tested with an ordinary seven-saw gin, and also with a churka made by Mr. Frost, of a simpler* construction, which cost about 15 rupees. Mr. Frost's churka differs chiefly from Mr. Mather's in having the motion communicated to both rollers by means of leather bands, and in not being fitted with a revolving brush or with a long box for the delivery of the wool; Mr. Frost's churka has a small fly-wheel attached to the smaller iron roller, to give steadiness to its motion and lessen the chance of the driving-band slipping. The length of the cleaning-rollers is the same in both churkas, viz. 13 inches, but their diameter differs; in Mr. Mather's the diameter of the wooden roller is 1½ inches, and that of the iron roller half an inch; in Mr. Frost's the diameter of the one is 1¼ inches, and of the other five-eighths of an inch. Both churkas require two persons to work them, one to turn the driving-wheel, and the other to feed the machine with cotton. Mr. Frost's machine can, however, be worked without the driving-wheel by the same person who feeds it, and who then turns the rollers by means of a small winch with one hand while he feeds them with the other.

* See below, para.
14 to 19 of this
Memo.

7. The trials then, though not conclusive as to the absolute capabilities of either churka compared with the seven-saw gin, or with the foot-roller commonly used in this province, are decisive as to the relative merits of the two churkas, and establish the great superiority of Mr. Frost's over that constructed by Mr. Mather of Calcutta. The former turns out one-half more of wool than the latter, while it can be made for less than one-fifth of the price.

10. Mr. Blount was of opinion that—"4. Mr. Mather's churka is a well-finished, neat machine, but it is not more effective than an ordinary native churka; and as I think it cannot, even in the hands of persons accustomed to work the churka, be made to clean a quantity much in excess of the ordinary native machine, there can be no expectation that it can be introduced amongst the ryots and dealers in the Southern Mahratta country for cleaning of cotton. Mr. Mather's churka is similar to the one made by Mr. Burn, and sent by Government to Dharwar for trial in 1848; both machines have a brush attached, which is of no actual advantage (as it does not take out a particle of either leaf or dirt); the rollers are moved by a number of cog-wheels, and put in motion, in Mr. Burn's churka, by a handle attached to the machine; Mr. Mather's churka differs only in having an endless-screw on the ends of the roller, and the motive power given with a detached hand-wheel; this complication of cog-wheels and endless-screws is very objectionable, and is not necessary; the only object in applying them, I suppose, was to increase the speed of the rollers, and this was obtainable by a much simpler application of wheels and straps, as applied to the churka made up by Mr. Frost and tried at the same time with Mr. Mather's.

11. "Mr. Frost considered Mr. Mather's machine to be of excellent workmanship and ingeniously constructed, but for the smallness of the work it performs it is too expensive and too complicated a machine, and will never meet a ready sale in the Indian market; moreover, the parts which are most liable to wear away are the worm or the wood roller and the endless screw on the steel roller, which if they at any time should be broken or worn out, could not, in my opinion, be replaced by workmen of this part of the country, and the machine would then become quite useless."

12. In submitting the above reports from Capt. Wingate and Messrs. Blount and Frost, the collector of Belgaum observed that—"2d. The conclusion arrived at seems to be, that Mr. Mather's churka is inferior to one which has lately been constructed by Mr. Frost, and that the relative working of both is far inferior to that of a seven-saw cotton-gin."

I.
Bengal and
North Western
Provinces.

Quoted in para. 2
of this Memo.

13. The collector of Dharwar also forwarded copies of the reports quoted above by Capt. Wingate and Messrs. Blount and Frost, and observed—3d. “The two machines invented by Mr. Mather, which came here from Calcutta, are exactly alike, but do not in all respects correspond with the description of Mr. F. W. Simms in his letter, forming one of the accompaniments to Mr. Secretary Goldsmid’s communication, dated 24 May 1850, No. 4249. They differ in the following particulars:—

“1st. There is no iron grid or grating below the brush-fan but a plain board; this difference is of little consequence.

“2d. The upper roller is pressed down by screws, and not by weights, as stated by Mr. Simms. These screws are objectionable, as they sometimes require adjustment, to which it would be difficult to get a common native labourer to attend.

“3d. These machines are worked by an endless-screw, although it may be inferred that there is none in that described by Mr. Simms; at the same time motion is communicated by a spur-wheel and pinion, as stated by him.

“4th. I beg to state I quite concur with Capt. Wingate and Mr. Blount in the opinion they have expressed as to the great superiority of the saw-gin used in the Southern Mahratta country over churkas of any kind, both as regards quantity of work and cheapness.”

(True extract.)

(signed) A. Malet, Chief Secy. to the Govt. of Bombay.

No. 16.

NOTE by A. R. Young, Esq., Under Secretary to the Government of India in the Home Department.

Mather’s cotton-cleaning machine.

Mr. Mather was first engaged by the Lieutenant-governor North Western Provinces in 1847 to make up 12 of his cotton-cleaning machines.

Afterwards, at the strong recommendation of Mr. Simms, he was engaged in 1844 to construct eight sets of them, or 96 machines, for the Government of India.

For these, applications were made as follows by the several Governments, viz. 18 by Bengal, 10 by Bombay, 2 by Madras. Bengal, however, only availed itself of 16, and one was made over to the Agricultural and Horticultural Society. As there still remained a large number in store available for further demands, the other Governments (including the Government of North Western Provinces) were asked whether they required any more.

The Agra Government answered in the negative, and no reply has yet been received from Madras, from which it is to be presumed that they require no more.

The Government of Bombay, however, has just replied by forwarding extracts of a memorandum, showing the positive inferiority of these new machines to the common native churkas in use in different parts of that Presidency, both in point of usefulness and cheapness. The machines in question have been disapproved of by the Bombay authorities without exception, and Mr. Sandon, to whom some were temporarily made over for trial by the collectors of Broach, has described them to be merely a modification of a useless one which came out some years ago under the name of “Glasgow churka.”

The cost of these machines was as follows:

Mr. Mather originally stipulated to make them at the rate of 60 rupees each, that is 5,760 rupees for the whole, and shortly afterwards was authorised to construct a cattle mill, at a cost not exceeding 530 rupees, making, in the aggregate, 6,290 rupees.

The actual cost, however, may be thus stated—		Rs.	a.	p.
Total amount received by Mr. Mather	- - - -	6,094	8	9
Unadjusted demands against him for cast brass and iron works supplied from the Cossipore foundry	- - - -	1,750	4	4
Unadjusted demands against him for stores obtained by him from the Iron Bridge Yard	- - - -	101	10	9
Salary for 18 months, at Rs. 400 per mensem	- - - -	7,200	-	-
Total	- - - Rs.	15,146	7	10

exclusive of the wear and tear of the lathes, &c. (valued at Rs. 2,397. 2. 4.), which were lent to him from the Cossipore foundry. The last account rendered by Mr. Mather, under date the 15th May 1850, however, showed a balance in his favour of Rs. 3,912. 5. And in March 1851, this Government, to put an end to the matter, decided upon debiting the whole cost on account of these machines to the Government of India, and authorised the Military Board to write off the several demands existing in their books against Mr. Mather.

The number of machines remaining in store is 67, and in January 1851 the Military Board having represented that they occupied more space in the arsenal than could be conveniently

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA 443

veniently spared, they were ordered to be sold off to the highest bidders by public auction; a bid of five rupees each, however, was only offered for them, and the Commissary of Ordnance at Allahabad was therefore instructed in November last, at the suggestion of the Military Board, to make inquiries whether, before disposing of them in Calcutta to such disadvantage, a higher price could not be obtained for them at Allahabad or at Mirzapore.

No answer has as yet been received from the Commissary, and here the matter now rests.

26 October 1852.

(signed) *A. R. Young*,
Under Secy. to the Govt. of India.

I.
Bengal and
North Western
Provinces.

(No. 802.)

From *A. R. Young*, Esq., Under Secretary to the Government of India, to the
Military Board.

No. 17.

Gentlemen,
I AM directed to call attention to my letter, No 949, dated the 25th November last, regarding the cotton-cleaning machines constructed by Mr. Mather, and to request that the information therein called for may be furnished.

Home Depart-
ment.

Council Chamber, 5 November 1852.

I have, &c.
(signed) *A. R. Young*,
Under Secy. to the Govt. of India.

EXTRACT from the Proceedings of the Most Noble the Governor-General of India in Council, in the Home Department, under date the 29th November 1852.

(No. 6168.)

From the Military Board to the Most Noble *James Andrew* Marquis of *Dalhousie*, K.T.,
Governor-General of India, in Council, Home Department.

No. 26.

My Lord,
WE do ourselves the honour to acknowledge the receipt of Government letter, Home Department, No. 802, dated 5th instant, requesting information as to the steps taken by our Board for disposing of the cotton machines constructed by Mr. Mather.

Ordnance Depart-
ment.

2. We beg to report, that in December last we directed the Deputy Principal Commissary of Ordnance to forward two of the machines to the Allahabad magazine, and at the same time directed the Commissary of Ordnance at that station to ascertain, on their receipt, if a reasonable price could be obtained for them at Allahabad or Mirzapore.

Abstract.
Reports the steps
taken for the dis-
posal of the cotton-
cleaning machines
made by Mr.
Mather.

3. We have as yet received no reply, but have again called on the Commissary of Ordnance for the information required, and also directed him to explain the cause of the delay which has occurred.

Fort William, 18 November 1852.

We have, &c.
(signed) *G. E. Gowan*, Brigadier.
R. Mactier, Lt.-Col.

EXTRACT from the Proceedings of the Most Noble the Governor-General of India in Council, in the Home Department, under date the 21st January 1853.

(No. 7301.)

From the Military Board to the Most Noble *James Andrew* Marquis of *Dalhousie*, K.T.,
Governor-General of India, in Council, Home Department.

No. 27.

My Lord,
IN continuation of our letter, No. 6168, of the 18th November last, reporting the steps taken by our Board for disposing of the cotton machines constructed by Mr. Mather, we do ourselves the honour to submit, for the information and orders of your Lordship in Council, the accompanying copy of documents, as per margin,* from the Commissary of Ordnance, Allahabad, Captain Geo. G. Channer, Artillery, forwarding the opinions of the Commissioners of Allahabad and Benares, and also that of the several collectors in the Benares district, on the likelihood of disposing of the cotton machines.

Ordnance Depart-
ment.

Abstract.
Submits copy of
correspondence
respecting the dis-
posal of cotton-
cleaning machines
constructed by Mr.
Mather, and so-
licits orders to their
being sold by
auction.

2. It

* Letter, No. 917, of the 26th Nov. 1852, from the Commissary of Ordnance, Allahabad, with annexures; letter, No. 974, of the 8th Dec. 1852, from ditto ditto, with copy of a letter, No. 69, from Commissioner of Allahabad.

I.
Bengal and
North Western
Provinces.

2. It is clear from this correspondence that there is no chance of disposing advantageously of these machines, or of introducing their use for cotton cleaning; and all measures available having now been tried for their disposal without success, we recommend their being sold by public auction to the highest bidders.

We have, &c.
(signed) *G. E. Gowan*, Brigadier.
W. Mactier, Lt.-Col.

Fort William, 29 December 1852.

(No. 917.)

From Captain *Geo. G. Channer*, Commissary of Ordnance, Allahabad, to Lieut. *J. P. Beadle*,
Officiating Secretary, Military Board, Fort William.

Sir,

Allahabad Magazine Office, 26 Nov. 1852.

IN reply to your letter, No. 6168½, under date the 18th instant, I have the honour to state that I have not been unmindful of the Board's orders.

2. The cotton machines reached me on the 6th of May last, and I immediately placed myself in communication with the Commissioners of the Allahabad and Benares divisions, and solicited their aid in carrying out the wishes of Government contained in letter No. 6631, dated 24th December last, a copy of which I enclosed for their information.

3. The Commissioner of Benares has favoured me with a reply, a copy of which, as per margin,* is herewith enclosed.

4. The Commissioner of Allahabad has not yet answered my letter, which is the cause of the delay of my report. I beg to state that, at his request, I sent one of the machines to his kutcherry, with the view of its being inspected by the natives coming in from the district on business there.

5. I have done all in my power to publish the merits of the machines to the native community; but I have not yet been able to persuade any one to become a purchaser.

6. I respectfully beg to suggest, that if a few of the machines were presented by Government to influential cultivators of cotton, they could practically test their merits, and introduce them favourably to the notice of others, who might thus be induced to purchase one for their own use.

7. By to-day's post I shall request the Commissioner of Allahabad, who is at present absent on his tour of inspection, to communicate to me the result of his inquiries amongst the natives, which shall be forwarded to the Board as soon as received.

(No. 42.)

From *E. A. Reade*, Esq., Commissioner 5th Division, to Captain *Geo. G. Channer*,
Commissary of Ordnance, Allahabad.

Commissioner's Office, 5th or Benares Division,
15 July 1852.

Sir,

I HAVE the honour to acknowledge the receipt of your letter, dated 7th May last, No. 29, with its annexure, relating to two cotton-cleaning machines for sale at the Allahabad Magazine.

2. From the replies of the collectors in this division, dated as in the margin,† and herewith forwarded, you will see that there is no prospect of selling cleaning machines in this part of the country.

3. You will be pleased to return the enclosures when no longer required.

(No. 93.)

From the Collector of Gorruckpore to *E. A. Reade*, Esq., Commissioner, 5th Division,
Benares.

Sir,

I HAVE the honour to acknowledge the receipt of your circular letter, No. 29, dated 10th instant, and, in reply, to state that there is no chance of finding a purchaser in this district for the cotton-cleaning machines alluded to; the saw-gin belonging to the quondam cotton farm here is still lying in the magistrate's málkhána.

Gorruckpore, Collector's Office,
15 May 1852.

I have, &c.
(signed) *C. Chester*,
Collector of Gorruckpore.

* No. 42, dated 18th July 1852, with copies of several enclosures.

† Gorruckpore, dated 15th May, No. 93.

Azimghur, dated 11th June, No. 178.

Jaunpore, dated 26th June, No. 218.

Mirzapore, dated 13th July, No. 207.

Benares, dated 27th May, No. 197.

Ghazeepore, dated 2d June, No. 237.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 445

I.
Bengal and
North Western
Provinces.

(No. 178.)

From *A. Geo. Tucker*, Esq., Officiating Collector of Azimghur, to *E. Reade*, Esq.,
Commissioner, 5th Division, Benares,

Sir,

In reply to your circular, No. 29, dated 10th ultimo, I have the honour to inform you, that proclamations have been made at all the tehsildarees, inviting persons to purchase the cotton-cleaning machines. I do not think that there is any chance of disposing of either of them in this district.

I have, &c.

Assist. Collectorship, 11 June 1852.

(signed) *Geo. Tucker*, Officg. Coll.

(No. 218.)

From *M. C. Ommaney*, Esq., Collector of Jaunpore, to *E. A. Reade*, Esq., Commissioner,
5th Division, Benares.

Sir,

I HAVE the honour to acknowledge the receipt of your circular, No. 29, dated 10th ultimo, and to state that there is no chance of the disposal of such machines in this district.

I have, &c.

Jaunpore Collectorship, 26 June 1852.

(signed) *M. C. Ommaney*,
Coll. of Jaunpore.

(No. 207.)

From *W. Roberts*, Esq., Collector, Mirzapore, to *E. A. Reade*, Esq., Commissioner,
5th Division, Benares.

Sir,

WITH reference to your circular letter, No. 29, dated 10th May last, I have the honour to inform you, that on its receipt I addressed the European merchants on the subject, but have received no answer from them; hence I conclude they do not care to take the machines for cleaning cotton.

2, Measures were also taken to make known the circumstance of such being for sale to the native merchants; but no one has come forward to purchase; they have replied that they do not clean cotton, and have therefore no necessity for the machine.

3. I do not think that there is any chance of disposing of them.

I have, &c.

Mirzapore Collectorship, 3 July 1852.

(signed) *W. Roberts*,
Collector, Mirzapore.

(No. 197.)

From *F. B. Gubbins*, Esq., Collector of Benares, to *E. A. Reade*, Esq., Commissioner
for the Benares Division, Benares.

Sir,

I HAVE the honour to acknowledge your letter, No. 29, dated 10th instant, and, in reply, to inform you, that, after making due inquiries on the subject, I see no chance of the cotton-cleaning machines mentioned in your letter being sold in this district.

I have, &c.

Benares Collectorship, 27 May 1852.

(signed) *F. B. Gubbins*,
Collector.

L.
Bengal and
North Western
Provinces.

(No. 239.)

From the Collector of Ghazee-pore to *E. A. Reade*, Esq., Commissioner, 5th Division,
Benares.

Mis. Sir,
I HAVE the honour to inform you, that copies of your circular letter, No. 29, dated 10th
ultimo, were forwarded to the merchants and planters residing in this district.
It appears from their replies that they do not require the machines. There are no means
of disposing of them here, as very little cotton is grown in the district.

Ghazee-pore Collectorship, 2 June 1852. I have, &c.
(signed) *R. Thornhill*,
Collector.

(True copies.)

(signed) *Geo. G. Channer*, Captain, Commissary of Ordnance.

(No. 974.)

From Captain *Geo. G. Channer*, Commissary of Ordnance, Allahabad, to Lieutenant
J. P. Beadle, Officiating Secretary to the Military Board, Fort William.

Sir, Allahabad, Magnet Office, 8 December 1852.
WITH reference to the 7th paragraph of my letter, No. 917, under date the 26th ultimo,
I have the honour to annex herewith, for the information of the Military Board, a copy of
a letter, No. 69, dated 6th instant, from the Commissioner of Allahabad to my address
on the subject of the cotton machines therein alluded to.

(No. 69 of 1852.)

From *R. Lowther*, Esq., Commissioner, Allahabad Division, to Captain *G. G. Channer*,
Commissary of Ordnance, Allahabad.

Sir,
I HAVE the honour to acknowledge the receipt of your letter, dated the 26th ultimo,
No. 918, and to inform you, that the zemindars of this district do not approve of the cotton
machine, not only on the score of expense, but of the principle on which it is worked,
requiring too much manual labour.

Commissioner's Office, 4th Division, Allahabad, I have, &c.
6 December 1852. (signed) *R. Lowther*,
Commissioner.

(True copy.)

(signed) *Geo. G. Channer*, Captain,
Commissary of Ordnance.

(True copies.)

(signed) *J. P. Beadle*,
Offg. Secretary Mily. Board.

(No. 25.)

No. 28.

From *A. R. Young*, Esq., Under Secretary to the Government of India, to the
Medical Board.

Home Depart-
ment.

Gentlemen,
IN reply to your letter, No. 7301, dated the 29th ultimo, I am directed to state that the
Most Noble the Governor-General in Council is pleased to authorise the cotton-cleaning
machines therein referred to being sold by public auction to the highest bidder.

Council Chamber, 12 January 1853. I have, &c.
(signed) *A. R. Young*,
Und. Secy. to the Govt. of India.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 447

EXTRACT from a Despatch from the Government of India to the Honourable the Court of Directors, in the Home Department, dated the 13th April 1850, No. 17.

I.
Bengal and
North Western
Provinces.

15. The Government of Bengal submitted a recommendation of the Agricultural Society for the offer of a prize for the invention of an improved and efficient cotton-cleaning machine. We consented to grant a reward of 5,000 rupees to the inventor of such a machine as should not only perfectly separate the cotton wool from the seed, but should also be expeditious in its action, and simple, and comparatively cheap in its construction, so as to render it likely to come into practical use. The 1st of March 1852 has been fixed as the date for awarding the prize, and in the event of no machine being produced worthy of the prize, we have expressed our willingness to accord a smaller prize for any machine of merit in proportion as it may be pronounced more or less to have attained the object aimed at. An advertisement to this effect proposed to be published in the leading periodicals and newspapers of Great Britain, the continent of Europe and America, and throughout India, was submitted by the Agricultural Society, and approved by us.

Prize offered for an improved cotton-cleaning machine.

Home Cons.,
1 September 1849,
Nos. 3 to 5.
Home Cons.,
16 November 1849,
Nos. 13 to 16.

16. A quantity of the cotton for which the machine was required was ordered to be placed at the disposal of the Agricultural Society to be offered as samples to intending competitors for the prize.

EXTRACT from the Proceedings of the Honourable the President of the Council of India, in Council, in the Home Department, under date the 1st September 1849.

(No. 673.)

From the Under Secretary to the Government of Bengal to *W. Grey, Esq.*, Under Secretary to the Government of India, Home Department.

No. 3.

Sir,

I AM directed by the Honourable the Deputy Governor of Bengal to forward, for the consideration and orders of the Government of India, the accompanying original letter from the honorary secretary to the Agricultural and Horticultural Society, dated the 15th instant, with its enclosures.

Revenue.

I have, &c.
(signed) *W. Seton Karr*,
Under Secy. to the Govt. of Bengal.

Fort William, 21 August 1849.

From *James Hume, Esq.*, Honorary Secretary, Agricultural and Horticultural Society, to *J. P. Grant, Esq.*, Secretary to the Government of Bengal.

No. 4.
(Enclosure.)

Sir,

I HAVE the honour to enclose a printed copy of a report drawn up by a committee of the Agricultural and Horticultural Society appointed to consider a proposition made to the society for offering a prize for an improved cotton-cleaning machine, unrestricted to any particular mechanical principle. This report was adopted at a general meeting of the society, held on the 9th instant, and, referring to the recommendation contained in the 3d paragraph thereof, I am directed to request you will have the goodness to bring the same to the notice of his Honor the Deputy-governor of Bengal, and to express the hope of the society, that, meeting with his Honor's concurrence, he will be pleased to submit it for the favourable consideration of the most noble the Governor-general.

2. I may remark, that the society has already awarded its gold medal, and the sum of 500 rupees, placed at its disposal by Major Jenkins, Commissioner of Assam, to Mr. J. H. Mather, civil engineer, for an improved cotton-cleaning machine, it being deemed superior to the others that were entered for competition as respects the cleaning of the cotton and the quantity turned out in a given time. Nevertheless, it is the opinion of the society that there is still much room for improvement, and that restricting machines for competition to the churka principle (such being the wish of the liberal donor of the money grant) hitherto confined mechanical ingenuity to a very limited compass. Under these circumstances, it has been thought desirable that another prize should be offered, of

290—Sess. 2.

3 K 4

11/4

I.
Bengal and
North Western
Provinces.

the Government may be pleased to grant, under the conditions laid down in the 4th and 5th paras. of the committee's report; and further, as above mentioned, that the machine be not restricted to any particular mechanical principle, under the impression that so long as it is a practical and useful improvement, likely to lead to beneficial results, its mechanical contrivance can be of no importance, and that any restriction in this respect is calculated rather to limit the probabilities of success, and retard the real object which it is so very desirable to attain.

I have, &c.
(signed) *James Hume*,
Hon. Secy. A. & H. Society.

Calcutta, 15 August 1849.

REPORT of the Committee to consider the proposed Prize for an Improved Cotton Cleaning Machine, unrestricted to any particular Mechanical Principle; and the Suggestion that the Society shall procure Drawings and Models of Agricultural Machines.

[The following Report was presented at a General Meeting of the Agricultural and Horticultural Society, held on the 12th July 1849, and ordered to be printed and circulated for the information of resident Members, previous to its consideration at the following General Meeting on the 9th August].

Calcutta, 24 June 1849.

YOUR committee having taken into consideration the proposition contained in Mr. H. Mornay's letter, dated the 11th December 1848, suggesting that a prize be offered by this society for an efficient cotton-cleaning machine, unrestricted to any particular mechanical principle; and also the suggestion made by Major F. Jenkins, that the society do place themselves in communication with Messrs. Ransome, of Ipswich, and obtain from them priced lists and drawings of agricultural machines, with the proposal, in addendum, that models of these machines be also obtained from the same parties, now beg to submit their report upon the above propositions, with suggestions as to the mode in which it appears to them these proposals would be most effectively and advantageously carried out.

2. With reference to the propriety of encouraging the invention of an efficient machine for divesting cotton of its seed, it is a desideratum of such high and national importance, that there could not be two opinions on the subject; and it only remained for your committee to determine the value of the prize it appears expedient to offer to any one who should succeed in contriving such an instrument, the conditions under which the prize should be submitted for public competition, and the period of time, if limited, that the reward should be declared open to be competed for.

3. It would seem that there is much difficulty in contriving a cotton-cleaning machine which shall not only be perfect in its action in divesting cotton wool of its seed, but also possessing the several qualities of expedition, simplicity, and comparative cheapness, so necessary to render it likely to come into practical use. Not only therefore is great ingenuity required in its contrivance, but doubtless much valuable time and expense would be consumed and incurred in experimental trials before a model could be produced, possessing all the practical qualities required. Your committee are therefore of opinion, that it is desirable that a high pecuniary reward be offered as a stimulus to inventors. With reference, therefore, to its great national importance, we recommend that Government be solicited to place a certain sum, such as they may deem fit, to be awarded by the society, in conjunction with their gold medal, to the successful inventor of such an implement. In making this suggestion, your committee have in view the earnest interest and liberal encouragement which Government have always taken in and afforded to the improvement of this great Indian staple, concluding that this proposition is consequently such as will be at once readily met, and cordially co-operated in by them.

4. With regard to the conditions under which the prize should be offered, this subject has had the deliberate consideration of your committee. The churka, as constructed by the natives, in its most efficient form, is of course an extremely cheap machine, and it could not reasonably be expected that a perfectly acting apparatus, however simple in principle, could be properly constructed at anything like so low a rate. The cheapness of the native instrument is counterbalanced by the extreme slowness of its action, and other numerous disadvantages; and a more expensive machine, possessing all the necessary practical qualities, would, no doubt, eventually supersede the native method, and contribute towards the important desideratum of restoring the export trade in this article. Your committee are therefore of opinion, that the cost of the machine should not be a specified condition restricting inventors competing for the prize. Indeed it appears to us that the offer should be made as free and general as possible, leaving the practical merits of the contrivances to the judgment of the society, or their committee, who would duly consider the several questions of cost, complexity, &c., relatively with the results in regard to power, speed,

5. We

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 449

I.
Bengal and
North Western
Province

5. We think it should be made a condition, that the machine be successful in cleaning the ordinary short staple cotton grown in India.

6. With reference to the question as to whether the time should or should not be limited, it appears desirable that a stated period be fixed for the prize to be open to competition. Your committee therefore propose, that the 1st March 1852 be fixed as the date on which the trial of the machines sent in to the society shall take place; and that each competitor shall send a full-sized working model of his invention to the society's rooms, at the Metcalfe Hall, with a letter and description of the machine, and its mode of working, addressed to the secretary, on or before the 1st February of that year, in order that the necessary arrangements for the trial may be made. Should no successful machine be produced during that time, the society could renew the offer if necessary.

7. In case of there being only one candidate, your committee consider that, were his invention found superior to the native instrument, and that for which the society have already awarded a prize, it would yet remain to be determined whether the merits it possessed were, under all the circumstances, sufficient to warrant the conclusion that it was likely to come into practical operation, to the eventual supersession of the others; such as to entitle it to the prize. In the event of there being more than one competitor, and the prize being awarded, perhaps it might be well to award a silver medal to such unsuccessful competitors whose models showed much ingenuity and comparative success.

8. Your committee further recommend, that it should be made a condition that the society shall have the option of purchasing the machine submitted for which the first prize is awarded at the cost price of its construction.

9. It has been suggested, by a member of your committee, that it is also desirable that the society shall offer a separate prize for an efficient "cotton thrasher," adapted to free either kuras or cotton of the indigenous kinds from dirt and trash. From the inquiries we have been able to make, it appears that such a machine is much wanted, and recommend, therefore, that a silver medal and 250 rupees, being the amount of the accumulated interest on Major Jenkins' premium, be offered to the successful inventor of such an instrument. The same rules to be applied in the decision of the merits of this, as are proposed for the cotton-cleaning machine.

10. On the subject of the proposition made by Major F. Jenkins, your committee are unanimous in their opinion, that it would be both desirable to obtain from Messrs. Ransome priced lists and drawings of agricultural machines, and also to obtain models of such as are likely to be applicable to Indian cultivation. We would suggest, therefore, that the honorary secretary be requested to place himself in communication with Messrs. Ransome; first to obtain from those gentlemen the priced lists and drawings, after which the society could select such as were most desirable to get models of, to the amount the society could afford for this purpose, and then forward an order for their manufacture.

11. It would also be desirable that the society should possess full-sized working models of all the cotton-cleaning machines known in practical use, including Mr. Mather's churka.

(signed) *Hy. Mornay.*
Wm. Saye, Lieut.-col.
J. H. Mather, Civil Engineer.
J. M. Vos, Civil Architect and Engineer.
T. F. Henley.

(No. 500.)

From *W. Grey, Esq.,* Under Secretary to the Government of India, to *W. Seton Karr, Esq.,*
Under Secretary to the Government of Bengal

No. 5

Sir,

I AM directed to acknowledge the receipt of your letter (No. 673), dated the 21st ultimo, submitting a letter from the secretary of the Agricultural and Horticultural Society, containing the report of a committee appointed by the society, for the purpose of considering the expediency of offering a prize for an efficient cotton-cleaning machine, unrestricted to any particular mechanical principle. Home Department

2. On the recommendation of this committee, the society now solicit the Government to place a certain sum at their disposal, to be awarded by the society to the successful inventor of an improved and efficient machine.

3. I am directed to state, that the President in Council is willing so far to meet the wishes of the society as to consent that a reward of 5,000 rupees shall be announced to be given, on the 1st of March 1852, to the inventor of an improved cotton-cleaning machine, such as, in the opinion of the Government, shall perfectly attain the principal objects in view, as described in the 3d paragraph of the report rendered by the society's committee.

296—Sess. 2.

3 L

4. His

I.
Bengal and
North Western
Provinces.

4. His Honor in Council would wish that the machines submitted by competitors for this prize should, in the first instance, be examined and reported on by a committee appointed by the society; but the Government will also nominate such persons as they may see fit to examine the machines submitted to competitors, and the report of the society's committee must be forwarded to Government, with whom alone will rest the ultimate decision in the matter.

5. I am desired to add, however, that in case of no machine being adjudged worthy of the prize offered, the President in Council will be ready to accord a smaller prize for any machine of merit, in proportion as such machine may be pronounced more or less to have attained the objects aimed at.

I have, &c.

(signed) *W. Grey,*
Under Secy. to the Govt. of India.

Fort William, 1 September 1849.

No. 13. EXTRACT from the Proceedings of the Honourable the President of the Council of India in Council, in the Home Department, under date the 16th November 1849.

(No. 954.)

Revenue. From the Under Secretary to the Government of Bengal to *W. Grey, Esq.*, Under Secretary to the Government of India, Home Department.

Sir,

WITH reference to your letter, No. 500, of the 1st September last, I am directed by the Honourable the Deputy Governor to forward the accompanying original letter from the secretary to the Agricultural and Horticultural Society, dated the 31st ultimo, with a copy of the advertisement which the society propose, with the approval of the Government of India, to publish regarding the prize offered for an improved cotton-cleaning machine.

2. The society also wish to be furnished with a portion of the Banda cotton procured for Mr. Mather from the North Western Provinces, should any be available for distribution.

3. With your reply the return of the original documents is requested.

I have, &c.

(signed) *W. Seton Karr,*
Under Secretary to the Government of Bengal.

Fort William,
8 November 1849.

No. 14.
(Enclosure.)

From *James Hume, Esq.*, Honorary Secretary Agricultural and Horticultural Society, to *W. Seton Karr, Esq.*, Under Secretary to the Government of Bengal.

Sir,

I AM directed by the Agricultural and Horticultural Society to acknowledge the receipt of your letter, No. 799, dated the 20th ultimo, forwarding copy of a communication, No. 500, from the Under Secretary to the Government of India, Home Department, of the 1st ultimo, and in reply to convey the best acknowledgments of the society for the handsome prize of 5,000 rupees offered by the President in Council, on the application of the society, to the successful inventor of an improved and efficient machine for divesting cotton of its seed, subject to the terms notified in Mr. Under Secretary Grey's communication.

2. I am further directed to forward, in accordance with a resolution passed at a special meeting of the society, held on the 30th instant, copy of an advertisement for the approval of Government. It is proposed by the society to publish this advertisement in its present form, or any other that Government may suggest, in the leading periodicals and newspapers of Great Britain, the continent of Europe and America, and throughout India, both in the English, Bengallee, and Urdu languages.

3. In conclusion, I beg to enclose copy of another resolution passed at the same meeting, embodying an application to Government for a supply of Banda seed cotton for the purposes set forth therein.

I have, &c.

(signed) *James Hume,*
Honorary Secretary A. and H. Society.

Calcutta, 31 October 1849.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 451.

COMPETITION.—FIVE THOUSAND RUPEES REWARD.

I.
Bengal and
North Western
Provinces.

THE Government of India, at the suggestion of the Agricultural Society of India, having announced that a reward of 5,000 rupees shall be given to the inventor of an improved cotton-cleaning machine (unrestricted by any particular mechanical principle), such as in the opinion of the Government shall perfectly attain the principal objects described by the society, namely, to be so perfect in its action in divesting cotton wool of its seed, and possessing such qualities of expedition, simplicity, and comparative cheapness, as to render it likely to come into practical use; and the Agricultural Society having determined to adjudge its gold medal for a like purpose, it is hereby notified that the following are the conditions under which the above prizes will be awarded:—

Conditions—1. The machine shall be capable of cleaning the ordinary short staple cotton grown in India.

2. Each competitor shall send a full-sized working model of his invention to the society's rooms, Metcalfe Hall, Calcutta, together with a letter descriptive of the machine and the mode of working it, addressed to the Secretary Agricultural Society of India, on or before the 1st of January 1852.

3. In the event of no machine being deemed worthy of the above-named prize of 5,000 rupees, a smaller prize will be awarded for any machine, in proportion as such may in the opinion of the Government of India be pronounced, more or less, to have attained the objects in view.

4. In the event of there being more than one competitor, and the gold medal being awarded by the Agricultural Society, its silver medal will be given to the inventor of the next best machine, provided it shows much ingenuity and comparative success.

Notice is hereby also given, that the Agricultural Society of India will be prepared to award (subject to the same conditions as those named above) its silver medal, and the sum of 250 rupees, placed at its disposal by Major Jenkins, agent to the Governor-general in Assam, for an efficient cotton-thrashing machine, adapted to free either seed cotton or cotton wool of the indigenous kinds from trash.

Proposed by the Honourable Mr. Bethune; seconded by Mr. W. G. Rose:

“That application be made to Government requesting that as much of the Banda cotton which has been sent down for the use of Mr. Mather as is not needed for his experiments, be placed at the disposal of the society, for the purpose of enabling them to offer samples to intending competitors for the prize, in accordance with the terms of the resolution, of which notice was last given.”

The following is the notice in question:—

Notice of Motion.—Moved by the Honourable Mr. Bethune:

“That the society incur the necessary expense for sending about five cwt. of seed cotton to its agents, Messrs. Grindlay & Co., for the purpose of offering samples to intending competitors, at such price as may be sufficient to cover the prime cost and expense of transmission.”

(No. 666.)

From *W. Grey*, Esq., Under Secretary to the Government of India, to *W. Seton Karr*, Esq.,
Under Secretary to the Government of Bengal.

No. 15.

Sir,

IN reply to your letter, No. 954, dated the 8th instant, I am directed to state that the President in Council approves of the advertisement which the Agricultural and Horticultural Society propose to publish regarding the prize to be offered for an improved cotton-cleaning machine. Home Department

2. With reference to your second request, I am directed to say that Mr. Mather will be requested to make over to the society any portion of the Banda seed cotton which he may not require for his own experiments.

The original enclosures of your letter are herewith returned.

Fort William,
16 November 1849.

I have, &c.
(signed) *W. Grey*,
Under Secretary to the Government of India.

(No. 663.)

No. 16. From *W. Grey*, Esq., Under Secretary to the Government of India, to *J. H. Mather*, Esq.

Sir,
Home Department. THE Agricultural and Horticultural Society having applied for a supply of Banda seed cotton of the description procured for you from the North Western Provinces, I am directed to request that you will be good enough to make over to that society any portion of the cotton which you may not require.

Council Chamber,
16 November 1849.

I have, &c.
(signed) *W. Grey*,
Under Secretary to the Government of India.

EXTRACT from a Despatch from the Government of India to the Honourable the Court of Directors, in the Home Department, dated the 27th September 1853, No. 65.

Cotton-cleaning machines sent in to compete for the prize offered in 1849.
Home Cons., 29th April 1853, Nos. 1 to 4; 27th May 1853, No. 34.
Pub. Let., No. 17, dated 23d April 1850, p. 15; No. 45, dated 10th Sept. 1851, p. 46.

19. Your Honourable Court are aware that in September 1849, at the recommendation of the Agri-Horticultural Society, the Government of India consented to give a premium of 5,000 rupees for an improved cotton-cleaning machine, such as, in the opinion of the Government, shall have fully attained the principal objects described by the society; viz., perfection in its action in separating cotton wools from the seed, and possession of such qualities of expedition, simplicity, and comparative cheapness, as would render it likely to come into practical use.

20. Four machines were sent in to compete for the prize:

1. Made by Messrs. Bates, Hyde & Co., of Massachusetts (a saw-gin).
2. Made by Messrs. Carver & Co., of Massachusetts (a saw-gin).
3. Made by Mr. Frost, engineer of the Government cotton works at Dharwar (a saw-gin).
4. Made by Mr. Mornay, of Calcutta (a machine on the churka principle).

21. A special committee was appointed by the society to examine into the merits and capabilities of these machines. The result of the experiments with the two first was considered satisfactory, and as their merits were equally balanced, the reward of 5,000 rupees has been divided between the manufacturers, Messrs. Bates, Hyde & Co. and Messrs Carver & Co., of Massachusetts.

22. Both these machines, however, as well as the one manufactured by Mr. Frost, were considered by the committee as by far too expensive to come into practical use among the ryots of Bengal; and the committee were of opinion, that no machine made of wood or iron, either upon the churka or saw-gin principle, could be produced with any pretension to good workmanship at a cost which could be afforded by a common ryot. To adopt any improved method of separating cotton from the seed, the committee thought it would be necessary to establish, in central positions, cleaning machinery on a sufficiently extensive scale to meet the wants of the cotton-growing districts. Such machinery to be turned by steam or other power, and placed under competent management.

23. A reference was made by us to the Lieutenant-governor of the North Western Provinces with a view to ascertain whether these machines could be beneficially

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 453

beneficially employed at Mirzapore or elsewhere by the Government as an experiment; but his Honour stated, that he had no facilities, either at Agra or Mirzapore, for putting them to the test of experiment, as since the death of Mr. Hamilton Bell in 1851, no one had come forward at Agra to maintain the efforts for the improvement of the cotton staple which that gentleman had prosecuted with so much zeal.

I.
Bengal and
North Western
Provinces.

EXTRACT from the Proceedings of the Most Noble the Governor-General of India in Council, in the Home Department, under date 29 April 1853.

(No. 278.)

From the Officiating Under Secretary to the Government of Bengal to *E. Thomas, Esq.*, Officiating Under Secretary to the Government of India, Home Department, dated Fort William, 29 March 1853.

No. 1.

Sir,

WITH reference to Mr. Under Secretary Grey's letter, No. 500, dated the 1st of September 1849, I am directed by the Most Noble the Governor of Bengal to forward the accompanying copy of a report from the Agricultural and Horticultural Society on the working of the cotton-cleaning machines which were submitted to competition for the prize of 5,000 rupees, offered by the Government of India.

Revenue.

I have, &c.
(signed) *W. G. Young,*
Offg. Under Secy. to the Govt. of Bengal.

From *A. H. Blechynden, Esquire, Secretary Agricultural and Horticultural Society,* to *J. P. Grant, Esquire, Secretary to the Government of India, Home Department.*

No. 2, Enclosure.

Sir,

I AM directed by the Agricultural and Horticultural Society to forward, for the information of the Government of India, copy of a report by the special committee appointed by the society to examine into the merits and capabilities of the cotton-cleaning machines, which have been sent in to compete for the prize of 5,000 rupees, offered by the Government of India through the society, as communicated in Mr. Under Secretary Grey's letter, dated the 1st September 1849.

I have further the honour to submit specimens of the three kinds of cotton and seed referred to in paragraph 15 of the committee's report, as having been cleaned by the machines in question. (See list annexed, 30 specimens in all.)

I have, &c.
(signed) *A. H. Blechynden,*
Secy. A. & H. Society.

Metcalf Hall, Calcutta,
16 March 1853.

LIST of Specimens of Cotton and Seed passed through the Machines submitted for Competition.

Mr. Frost's Machine:

- A 1. Madras cotton divested of seed.
- A 2. Seed of Madras cotton.
- A 3. Seed of Madras cotton as taken out of the hopper.
- B 1. Assam cotton divested of seed.
- B 2. Seed of Assam cotton.
- B 3. Seed of Assam cotton as taken out of the hopper.
- C 1. Bombay cotton divested of seed.
- C 2. Seed of Bombay cotton.
- C 3. Seed of Bombay cotton as taken out of the hopper.

Bengal and
North Western
Provinces.

Messrs. *Bates, Hyde & Co.*'s Machine:

- D 1. Madras cotton divested of seed.
- D 2. Seed of Madras cotton.
- D 3. Seed of Madras cotton as taken out of the hopper.
- E 1. Assam cotton divested of seed.
- E 2. Seed of Assam cotton.
- F 1. Bombay cotton divested of seed.
- F 2. Seed of Bombay cotton.
- F 3. Seed of Bombay cotton as taken out of the hopper.

Messrs. *Carver & Co.*'s Machine:

- G 1. Madras cotton divested of seed.
- G 2. Seed of Madras cotton.
- G 3. Seed of Madras cotton as taken out of the hopper.
- H 1. Assam cotton divested of seed.
- H 2. Seed of Assam cotton.
- H 3. Seed of Assam cotton as taken out of the hopper.
- I 1. Bombay cotton divested of seed.
- I 2. Seed of Bombay cotton.
- I 3. Seed of Bombay cotton as taken out of the hopper.

Mr. *Mornay*'s Machine:

- K 1. Madras cotton divested of seed.
- K 2. Seed of Madras cotton.
- L 1. Bombay cotton divested of seed.
- L 2. Seed of Bombay cotton.

REPORT of the Special Committee appointed at the General Meeting of the Society on the 12th of June 1852, to examine into the merits and capabilities of the Cotton-Cleaning Machines sent in to compete for the Government Prize of 5,000 rupees, and the Society's gold medal.*

1. YOUR committee assembled at the society's rooms, Metcalfe Hall, on the 17th of June 1852, and proceeded to elect a chairman and secretary.

2. The advertised conditions under which this competition was to be met were most carefully considered, and it was concluded to republish the same in this stage of the report:

"The Government of India having at the suggestion of the Agricultural and Horticultural Society of India, announced that a prize of 5,000 rupees shall be given for an improved cotton-cleaning machine (unrestricted by any particular mechanical principle) such as in the opinion of the Government shall have fully attained the principal objects described by the society, namely, to be so perfect in its action in separating cotton wools from the seed, and possessing such qualities of expedition, simplicity, and comparative cheapness, as to render it likely to come into practical use." And the Agricultural and Horticultural Society having determined to adjudge its gold medal for the same object, it is hereby notified that the following are the conditions under which the above and other prizes will be awarded.

CONDITIONS.

1st. The machine shall be capable of separating the ordinary short-staple cotton grown in India from the seed.

2d. Each competitor shall deposit, free of charge, a full-sized working machine in the society's rooms, Metcalfe Hall, Calcutta, together with a letter descriptive of the machine, and the mode of working it, addressed to the honorary secretary of the Agricultural and Horticultural Society of India, on or before the 1st of January 1852.

3d. In the event of no machine being deemed worthy of the full amount of 5,000 rupees, a smaller prize will be awarded for the best machine offered, in proportion to its merits, in the estimation of the Government of India.

4th. The

* Extract from the Proceedings of 12th June 1853:—On the recommendation of the Council, the following gentlemen were appointed a special committee to examine and report on the cotton-cleaning machines which have been sent in to compete for the Government prize of 5,000 rupees—Messrs. W. Haworth, T. F. Henley, W. Munro, F. G. Siddons, John Thompson, J. Ward, and J. M. Vos.—N.B. Mr. Munro returned to England before the committee commenced their experiments.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 455

E.
Bengal and
North Western
Provinces.

4th. The society's gold medal will be given with the Government prize of 5,000 rupees, and in the event of there being more than one competitor, a silver medal will be awarded or the next best machine, provided it shows much ingenuity and comparative success.

3. The most desirable mode of determining the merits of the several machines, and the plan of their arrangement, as well as the extent of the experiments to which they should be subjected, was settled.

4. It was concluded that the former reports of your several committees appointed to consider this important subject should be circulated amongst the members of the committee, and by them duly considered, with the view of acquainting themselves with the progress hitherto made towards attaining the desirable object of the society; viz., a simple, perfect, and comparatively cheap cotton-separating machine adapted to the wants of India.

5. At the first meeting of your committee, they felt some doubt whether the testing of the machines could be fairly conducted at that season of the year, the rains having set in. The kupas collected for experimenting on was ascertained to be very damp, so much so, that on a preliminary trial being made on each machine, it was found to be useless to proceed with the experiments, as no adequate means of drying the cotton were available. They were consequently compelled to postpone further trials until after the rains, when the kupas could be sufficiently dried by exposure to solar heat. This circumstance the committee trust may be received as their excuse for the long delay which has taken place since their appointment before their report could be prepared.

6. The society having provided for these trials, a considerable quantity of each of the following kind of cotton kupas, viz., Bombay, Madras, and Assam, your committee resolved to test each machine with a sufficient quantity of the three sorts of kupas as would, in their opinion, show their respective merits and capabilities in separating the cotton from the seed, and in producing the most marketable article at the least expense.

7. The condition of each kind of kupas was carefully examined; the Bombay and Madras sorts are believed to be such as produce the cotton generally exported from those ports in large quantity, both as regard colour, staple, and cleanliness, and they appeared to be fair samples of native-grown cotton. Of the Assam kupas, your committee can only report, that it appears to be a description of cotton very little known in Calcutta, nor does it appear to have been exported from the country at all; the kupas experimented on is said to be of the best kind produced in that district, the colour being fair, but the staple is very short, the fibre harsh and coarse, not unlike some kinds of sheep's wool; the seed is small, and very rough; the wool adhering most tenaciously to it, making it difficult for any machine to separate effectually the cotton from the seed.

8. The machines sent in for competition were four in number, by the following makers; viz., Mr. Frost, engineer of the Government cotton works at Dharwar, Bombay (a saw-gin); Messrs. Bates, Hyde & Co., of Massachusetts, United States of America (a saw-gin); Messrs. Carver & Co., of Massachusetts, United States (also a saw-gin); Mr. Mornay, secretary of the Assam Company, Calcutta, a machine on the churka principle.

9. Mr. Frost's machine has seven saws of 10 inches diameter, placed at $\frac{9}{10}$ inches (eight-tenths of an inch) apart, and intended to be worked by manual labour. Mr. Frost states, that he had made about 70 such gins up to October, 1851, but not quite equal in point of workmanship to the one sent to compete for the prize, his price for which is 65 rupees. He states that the machine is capable of cleaning $31\frac{1}{2}$ pounds of kupas in 28 minutes, the power employed being two men turning, and one boy feeding. This is about equal to 33 seers 750 per hour. It is not said what description of cotton was used in this experiment.

10. Messrs. Bates, Hyde & Co.'s machine has 15 saws of $12\frac{1}{4}$ inches diameter, placed at six-tenths of an inch apart, and is intended also to be worked by manual labour, the makers accompany it with the following remarks:—

“The seed may be ginned more or less clean of the fibre, as may be thought most desirable, it being questionable whether, as a matter of economy, the shorter fibres which remain upon the seeds would add to the value of the cotton. The fibre of the East Indian cotton sent for trial is about half the length of the ordinary upland cotton grown in the South-western States, and the seeds are about half the size, and more nearly round, hard, and plump.

“The cotton grown in Mississippi or Louisiana is more full of trash, leaf, and dirt, than the East Indian cotton.

“An ordinary sized eagle gin, turned by hand, having 15 to 18 saws, will turn out from 200 to 300 lbs. of clean cotton per day, if properly attended (300 lbs. per 12 hours, gives 25 lbs. cleaned cotton per hour.) A gin of 50 saws (turned by power) will give from 200 lbs. to 225 lbs. of clean cotton per hour. Our rule is, for a gin working to the best advantage, in our Southern States, one bale of cotton of 450 lbs. per day to every ten saws, say, for a
296—Sess. 2. 3 L 4 50 saw-

I.
Bengal and
North Western
Provinces.

50 saw-gin, five bales per day; a 60 saw-gin, six bales in 12 hours. The power required is three horses or mules, of average size and strength, or a similar amount when steam or water power is used to 50 saws."

The prices of the eagle cotton saw-gins, such as the one sent for competition (15 saws) is \$70 (seventy dollars) in Boston.

11. Messrs. Carver & Co.'s machine has 50 saws of ten inches diameter; the saws are placed at six-tenths of an inch apart, and is not intended to be worked by manual labour. This machine is too large to be fairly tested by any means within the reach of your committee for applying sufficient power to obtain the speed required, but the makers state its capabilities to be as follows:—

"Whilst at work upon the East Indian cotton sent for trial, the machine was turned by water power, and that it may be driven equally as well by steam, horse, mules, or oxen; the saws had 300 revolutions per minute, and it ginned at the rate of 75 lbs. of cleaned cotton per hour. A higher speed than 300 revolutions may be used without danger or injury to the machine or cotton, and the quantity got through will be increased in nearly the same proportions." The makers also state, that the gins which they usually make for American use have from 70 to 100 saws in each.

Messrs. Carver & Co. have not stated the price of this machine, but judging from the cost of the smaller one of Messrs. Bates, Hyde & Co.'s, it may, your committee think, be assumed at about 200 dollars.

12. Mr. Mornay's machine is constructed on the native churka principle. It has two sets of rollers placed one over the other, each pair has a steel upper roller of $\frac{7}{8}$ of an inch in diameter, and a hard wood roller below of $\frac{1}{8}$ inch diameter; that portion of the rollers to which the kupas is applied is about five inches long. The machine has two cast-iron side frames, which support the rollers and driving apparatus; the journals of each set of rollers work in gun-metal bearings, inserted in shots in the side frames; these bearings merely act as guides, the whole strain being received upon a combination of friction wheels placed inside the framing, and of as great a diameter as the space in which they work will admit of. The great novelty of this machine is a self acting apparatus, consisting of a table or grate in front of the rollers, formed of rods of iron, a space being left between each; the kupas is placed on this grating by hand, and is very evenly spread over its surface, requiring considerable dexterity and constant attention on the part of the person in attendance to keep the rollers supplied with cotton. Beneath the grate is a flat table surface, studied with prongs, forming combs, the ends of which, actuated by a crank, come up through the bars at each revolution, causing the points of the comb to push forward the cotton against the rollers.

Mr. Mornay states, that he considers this machine worked by hand as only a typical illustration of the principle on which he proposes that a number of such should be worked in combination, to be driven by steam or other power. He estimates the quantity of cotton it can turn out clean at 3 lbs. per hour, if proper attention is paid to the feeding; he is not able to give the cost of the machine submitted for competition, but he thinks machines constructed in England, on a larger scale, might be made at a cost of 15 rupees per roller. It is well to remark here, that the kupas intended to be cleaned by this machine requires first to be well opened out, and on a large scale; a separate machine for this purpose must be employed, and no such machine has as yet, that your committee are aware of, been invented.

13. Before proceeding to trial of the several machines, the kupas intended to be acted upon had all been slightly hand-picked, as is usual, to separate, as well as could be, the trash, leaves, and stained cotton.

14. The result of nine experiments, being three for each machine, on the saw-gin principle, and the details of each trial of the several machines, are set forth in the following tabular statement, and at the foot thereof is added the particulars of two extra trials of half an hour duration each, on the two American saw-gins.

15.—TABLE OF EXPERIMENTS.

206—Sess. 2.

3 M

NAME of MACHINE.	DIAMETER of SAWS.	Revolutions of Saw Cylinders per Minute.	Experiments.	Description of Cotton.	Quantity of Kupas Experimented on.	Time consumed in Experiments.	Clean Cotton Produced.	Seeds Obtained.	Loss or Wastage.	Work done per Hour in Kupas.	Work done per Hour in Clean Cotton.	Number of Feet of Saw-teeth engaged in producing a Bar of Class Cotton.
						<i>min. sec.</i>	<i>seers. ch.</i>	<i>seers. ch.</i>	<i>ch. dec.</i>	<i>seers. dec.</i>	<i>seers. dec.</i>	
Mr. Frost's, Engineer Government Cotton Works at Dharwar.	- - Seven Saws, 10 inches diameter, or say 31.4. circumference	325	First -	Madras -	4 seers -	13 0	0 15.725	2 15.025	0.350	18.461	4.536	76,298
			Second -	Assam -	1 " -	5 45	0 5.750	0 10.175	0.750	10.435	8.750	
			Third -	Bombay	1 " -	2 40	0 5.250	0 10.750	0.000	22.500	7.383	
			TOTAL -		6 " -	21 25	1 10.725	4 4.650	1.100	16.609	4.679	
Messrs. Bates, Hyde & Co., of Massachusetts, United States of America.	- - 15 Saws, 12½ inches diameter, or say 40 inches in circumference	140	First -	Madras -	4 seers -	11 20	1 0.500	2 15.500	0.000	21.176	5.459	78,093
			Second -	Assam -	2 " -	10 30	0 11.750	1 4.000	0.250	11.428	4.106	
			Third -	Bombay	2 " -	5 10	0 10.500	1 5.250	0.250	23.226	7.021	
			TOTAL -		8 " -	27 0	2 6.750	5 8.750	0.500	17.778	5.382	
Messrs. Carver & Co., of Massachusetts, United States of America.	- - 50 Saws, 10 inches diameter, or say 31.4. circumference	180	First -	Madras -	8 seers -	7 20	2 0.125	5 15.250	0.025	65.454	16.427	107,854
			Second -	Assam -	4 " -	9 30	1 6.000	2 9.500	0.500	25.263	8.684	
			Third -	Bombay	4 " -	4 30	1 4.750	2 11.250	0.000	53.333	17.292	
			TOTAL -		16 " -	21 20	4 10.875	11 3.000	1.425	45.000	13.162	

Memorandum.—Carver & Co.'s machine working for half an hour, four men at the wheel, who were relieved every five minutes.

Clean cotton turned out - - - - - 5 12

Clean seed turned out - - - - - 10 0 - - seers 15. 12.

Bates, Hyde & Co.'s machine for half an hour, two men at wheel, relieved as above.

Clean cotton turned out - - - - - 2 0

Clean seed turned out - - - - - 3 8 - - seers 5. 8.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 457

L
Bengal and
North Western
Provinces.

16. These experiments or trials occupied your committee several days; they were conducted with great care, the kupas was weighed out for each trial, and after the cotton had passed through, the cleaned portion, as well as the seed and motes, were again weighed separately, the particulars carefully noted; and your committee consider that they have not merely to append such remarks as were suggested by the circumstances attending each trial, but first considering it their duty to record their unanimous opinion that such trials as these, limited as to the means at the disposal of your committee for the purpose, can only be taken as an approximation of the capabilities and merits of each machine. The manual labour used was coolies, brought from the streets, none of whom had probably ever before been employed in turning a machine of any kind; they were soon fatigued with the work. The machines were fed with kupas by members of the committee, and to them it was evident that a longer experience of that duty would have enabled them to pass through much more cotton had the machines been worked at the uniform speed recommended by their severer makers; further, it requires a much more intimate acquaintance with the peculiar merits and arrangements of the machines, before a correct knowledge could be had of how to adjust the working parts to obtain the best result for the particular kind of cotton upon which they were to be tried, and some change in the adjustment of some of the parts, required, and means are provided for that purpose, so as to accommodate long or short staple cotton, or to keep the cotton longer or shorter time under operation, as may be found most desirable.

17. "Carver's" machine being on a large scale, and having no less than 50 saws, would require (as stated by the makers) steam or other power than manual labour to turn it, but as your committee had none other available, the amount of work performed by that machine during the trial falls far short of the estimate of the makers, yet they had every reason to believe that, had it been run at its proper speed, the estimated quantity of work it is capable of doing, as stated by the makers, would have been attained. The workmanship bestowed on the getting up of this machine is of the best kind, the arrangement of its various details is very simple, and altogether it appears a very desirable machine to be used on a central establishment for cleaning kupas in a cotton-growing district. The cleaned cotton from this machine, in each of the three trials, had no appearance of being cut or in any way injured by the cutting action of the saws; the staple seemed quite as long, on careful examination, as that picked from the kupas by hand; the cotton was, in every instance, clean, unmixed with cut seeds or motes; the seed was well freed of a useful fibre. The experiment on Assam kupas may be considered as severe a test as the machine could be subjected to, yet the result was as satisfactory as regards the perfect separation of the cotton from the seed, as in the other trials.

18. Bates, Hyde & Co.'s gin was worked by two men, who were relieved every five minutes; the labour was severe, and this, as well as "Carver's" gin, is more adapted to be worked by steam-power than by manual labour. This machine is very compact and strong, simple in its details, and of good workmanship. Its performance during the trials on the three kinds of kupas was quite as satisfactory as that of Carver's gin; the cotton and seed were in each case as clean, the fibre did not appear cut. Your committee are however of opinion, that this gin, like the previous one, is far too large to be used as a "cottage gin," and could be worked to advantage only when put down in a central situation of a cotton-growing district, along with a number of such like machines to be turned by steam or other more convenient power, in which case it would be better if prepared with 50 to 70 saws, as is usual in America; it would then be a most complete and a very desirable machine for the purpose.

19. Mr. Frost's machine performed its work tolerably well, but the cotton from it was not quite so well cleaned as that from the American machines, and more cotton was left upon the seed. It appears, however, by reference to the right-hand column of the Table, that it did more work in proportion to the number of feet of saw-teeth engaged in cleaning a given quantity of cotton than in any of the other gins. This apparent advantage was most probably due to the small number of saws in this gin, which enabled the two men to drive it at full speed, causing less slip to the teeth through the cotton than in the larger gins. It is probable, too, that the saws being farther apart than in the American gins, each row of teeth would take up a larger quantity of cotton, although to the deterioration of the quality of the work performed. Indeed, in all the saw-gins brought forward for competition upon the present occasion, and in a number of others now standing in the Society's rooms, and which have at various times been unsuccessfully tried for cleaning the cotton of this country, the arrangement is very nearly the same, the principal difference being in the hook of the saw-teeth and in the distance between the saws, and your committee are of opinion that very little alteration would be required to make any one of these machines do the work in the same efficient manner as the American gins now competing. In saying this, your committee are far from wishing to detract in the least from the merit of the parties who have so successfully employed their talents in adapting the saw-gin to the wants of the country. The alterations which have been effected, however small they may be in appearance, constitute the difference between a useless machine and an efficient one.

20. Mr. Mornay's churka was likewise tested on the three kinds of cotton; the following Table shows the result:

Bombay Kupas, ten Tolas or one-eighth of a Seer cleaned in 2½ minutes.	
Clean cotton	3 tolas.
Seed	7 tolas.
10 tolas.	

TO PROMOTE THE CULTIVATION OF COITON IN INDIA. 459

Madras Kupas, ten Tolas or one-eighth of a Seer cleaned in 2 minutes 45 seconds.

Cleaned cotton	-	-	-	2	4		Seed	-	-	-	7	12
							10 tolas.					

Assam Kupas - - - 10 tolas.

N. B.—An attempt to clean the above description of cotton failed *in toto*.

It should be mentioned that the above three kinds of kupas were well opened out with the hand before they were placed on the feeder, and moreover that the wheel was turned by two members of the committee working alternately. The other machines were worked by coolies, and the kupas thrown promiscuously into the hopper.

The trials were very limited as to quantity in consequence of the cotton requiring to be so well opened out by hand before it is put to the machine, and which is not necessary to be done for the saw-gins; the great nicety and attention required to be paid to the feeding of this machine is more than could be expected from any native, and in the absence of such close attention, the quantity got through would be very much reduced. The Madras and Bombay cotton was turned out quite clean and the staple uninjured, but the machine entirely failed in the trial on Assam kupas; the rollers could not lay hold of the short staple. This machine would be far too costly and complicated to be used as a "cottage churka" amongst the ryots. Mr. Mornay does not appear to have intended it for that purpose, but as a model of a larger machine, to be used in a central cleaning establishment. It was, however, very apparent to your committee, that to adapt it for the latter purpose, it would require its parts to be differently arranged, and much simplified; some additions would also require to be made to the feeding apparatus to ensure regularity of action. Your committee do not consider there was sufficient in the model before them to enable them to form an opinion, whether the machine could be so arranged on the large scale, suggested by Mr. Mornay, to work with precision and economy; a separate machine would be required to open out the cotton before it could be put to this churka; and your committee are not aware of any such machine being at present in use, or even invented.

21. In conclusion, your committee beg to state, that they find much difficulty in awarding to either of the American machines a degree of merit over the other. They, as well as Mr. Frost's machine, are by far too expensive to be used by the ryots as cottage machines, and your committee would take this opportunity of expressing their opinion, that no machine made of wood or iron, either upon the churka or saw-gin principle, can be produced with any pretension to good workmanship at a cost which could be afforded by a common ryot, and that to adopt any improved method of separating cotton from the seed-cleaning machinery, on a sufficiently extensive scale, must be established in central positions, so as to meet the wants of the cotton-growing districts; such machinery to be turned by steam or other power, and placed under competent management. The gin sent out by Messrs. Carver & Co., in its present state is the most complete, and best adapted for that purpose, and next to this Messrs. Bates, Hyde & Co.'s gin. At the same time it is only just to the latter gentlemen to observe, that had the Government advertisement stated that a machine adapted for a central establishment was the one wanted, their gin required nothing more than an addition of saws to make it equal to Messrs. Carver's machine. The committee would add also, that there is sufficient evidence in the arrangement and workmanship of Mr. Frost's machine to show them that there would be little difficulty in constructing a saw-gin on a large scale, and well suited in every respect to clean the short staple cotton of India, and that such machines might be made in many of the Government or private workshops in this country. Your committee would add, that they consider such machines very desirable, and if arrangements could be made to have them put down in convenient central situations in the cotton-growing districts, they would produce cotton of very superior degree of cleanliness, and in every respect (except length of staple) better suited to the wants of the home manufactures than that sent forward in the present day. At the same time your committee beg respectfully to submit that, in their opinion, an improved quality of cotton, such as would compete with that imported into England from the American States, can only be attained in this country by holding out every reasonable inducement to the native growers to pay more attention to the cultivation, and by introducing to their notice a better description of seed. A remission of all, or a fair portion of the land assessment to such growers as produced an article equal to a fixed standard would be a great inducement to the natives to attempt the attainment of so desirable an object, and when once gained, the increased demand and enhanced price of such cotton would very soon bring into cultivation large tracts of land which are at present productive of little revenue to the state, and thus in time make up to the Government any temporary loss by the remissions made in the first years of gradual improvement.

(signed) *W. Haworth.* *John Ward.* *F. G. Siddons.*
John Thomson. *J. M. Vos.* *T. F. Henley.*

Calcutta, February 1853.

(True copy.)
 (signed) *A. H. Blechynden,*
 Secy. A. & H. Society.

(True copy.)
 (signed) *W. G. Young,*
 Offg. Under Secy. to the Govt. of Bengal.

I.
 Bengal and
 North Western
 Provinces.

I.
Bengal and
North Western
Provinces.

No. 3.
Home Depart-
ment.

(No. 316.)

From *E. Thomas*, Esq., Officiating Under Secretary to the Government of India, to the Officiating Under Secretary to Government of Bengal.

Sir,

I AM directed to acknowledge the receipt of your letter, No. 278, of the 29th ultimo, forwarding copy of a report from the Agricultural and Horticultural Society, on the working of the several cotton-cleaning machines which were submitted to competition for the prize of 5,000 rupees, offered by the Government of India in 1849.

2. As the result of the experiments with the two machines noticed in the margin,* is considered satisfactory by the society, and their respective merits are stated to be evenly balanced, the Governor-general in Council is pleased to direct that the reward offered by the Government of India be equally divided between the two leading competitors, Messrs. Bates, Hyde & Co, and Messrs. Carver & Co., of Massachusetts.

3. A reference has been made to the Honourable the Lieutenant-governor, North Western Provinces, with a view to ascertain whether the machines in question could be beneficially employed at Mirzapore or elsewhere, by Government, as an experiment, in the manner proposed by the committee.

Council Chamber, 29 April 1853.

I have, &c.
(signed) *E. Thomas*,
Offg. Under Secy. to the Govt. of India.

(No. 335.)

No. 4. From *E. Thomas*, Esq., Officiating Under Secretary to the Government of India, to Secretary to Government, North Western Provinces.

Sir,

Home Depart-
ment.

I AM directed to forward, for the purpose of being laid before the Honourable the Lieutenant-governor, North Western Provinces, the accompanying copy of a letter from the Government of Bengal, No. 278, dated the 29th ultimo, enclosing copy of a report from the Agricultural and Horticultural Society on the working of the cotton-cleaning machines which were submitted to competition for the prize of 5,000 rupees offered by the Government of India in 1849.

2. The Most Noble the Governor-general in Council desires to be informed if his Honor the Lieutenant-governor is of opinion that the machines in question could be beneficially employed at Mirzapore or elsewhere, by Government, as an experiment, in the manner proposed by the committee.

Fort William, 29 April 1853.

I have, &c.
(signed) *E. Thomas*,
Offg. Under Secy. to the Govt. of India.

EXTRACT from the Proceedings of the Most Noble the Governor-General of India in Council, in the Home Department, under date 27 May 1853.

(No. 1824 of 1853.)

No. 34. From *W. Muir*, Esq., Secretary to the Government of the North Western Provinces, to *J. P. Grant*, Esq., Secretary to the Government of India, Fort William.

Sir,

Revenue Depart-
ment.

I AM directed to acknowledge the receipt of Mr. Officiating Under Secretary Thomas's letter, No. 335, dated the 29th ultimo, forwarding a report on the working of the cotton-cleaning machines which were submitted to competition for the prize of 5,000 rupees, offered by the Government of India in 1849, and inquiring whether the machines in question could be beneficially employed at Mirzapore or elsewhere, by Government, as an experiment.

2. The Lieutenant-governor has directed me in reply to state, that he has no facilities either at Agra or Mirzapore for putting the engines to the test of experiment, as recommended by the committee. His Honor regrets to say, that since the death of Mr. Hamilton Bell in 1851, no one has come forward at Agra to maintain the efforts for the improvement of the cotton staple, which that gentleman prosecuted with vigour til his last fatal illness.

Agra, 14 May 1853.

I have, &c.
(signed) *W. Muir*,
Secy. to Govt. of the N. W. Provinces.

(No. 522.)

COPY forwarded to the Government of Bengal, with reference to para. 3 of my letter, No. 316, dated the 29th ultimo.

Home Department, 23 May 1853.

By order, &c.
(signed) *E. Thomas*,
Offg. Under Secy. to the Govt. of India.

* 1. A saw-gin made by Messrs. Bates, Hyde & Co. Massachusetts.
2. Ditto, made by Messrs. Carver & Co., of ditto.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 461

From the Court of Directors to the Governor-General of India in Council,
dated 27 June (No. 5) 1849.

I.
Bengal and
North Western
Provinces.

We transmit herewith a bill of lading for 24 cases, each containing two "cottage saw-gins" for cleaning cotton, which have been consigned to you on board the "Anna Henderson," from Liverpool. Shipment of cottage saw-gins.

2. We also forward to you a copy of a report on these saw-gins which has been submitted to us by Dr. Royle, and also of a memorandum prepared by Mr. James Petrie, late engineer to the cotton experimental establishment at Coimbatore. Dated 6 Oct. 1848.

3. You will cause the gins to be tried in such localities in Bengal and in the North Western Provinces as you may consider suitable, and we desire that you will inform us as soon as practicable of the degree of success that may be found to attend their operation.

4. A small number of these gins may be presented to natives as rewards for successful cotton cultivation, in cases in which it may appear to you to be desirable to distribute them gratuitously; but we think that the ryots should rather be encouraged to purchase the machines, receiving them as tucavee advances, and paying for them by instalments. We conceive that in this way the people will be more likely to value and take care of them, and that their introduction into general use, if found suitable for the purpose for which they are intended, will be promoted.

5. The cost of the gins, exclusive of charges for freight and carriage, will be about 3*l.* each.

London, 27 June 1849.

(signed) *A. Galloway,*
J. Shepherd,
&c. &c.

Manchester Commercial Association,
14 September 1848.

Sir,

HEREWITH I have the honour to transmit a letter, addressed by the Vice-President of this Association to the Chairman of the Court of Directors of the Honourable East India Company, to which I am to request you will have the goodness to direct his attention.

James C. Melvill, Esq.,
&c. &c. &c.
India House, London.

I have, &c.
(signed) *Hugh Fleming,*
Secretary.

Manchester Commercial Association,
14 September 1848.

To Lieutenant-General Sir *James L. Lushington*, G. C. B., &c. &c., Chairman of the Court of Directors of the Honourable East India Company, London.

Sir,

In the month of April last, at the request of this association, you were so obliging as to forward to Manchester the model of a (25) saw-gin, such as is at present generally used for cleaning cotton at the Government establishments in India, and which the association applied for with a view to the construction of a gin of much smaller dimensions, believing that such a machine, by reason of its diminished cost and its greater facility of transport, would be found to be better suited to the means and requirements of the natives of India engaged in cotton cultivation, and would therefore be calculated materially to improve the condition of the cotton imported from that country, and also be a means of still further extending its cultivation.

It now affords me much pleasure to state that the association believe that after some expenditure and considerable trouble, they have succeeded in constructing a machine possessing the above advantages. It contains four saws, can be worked by one man, and will with ease clean 13·7 lbs. of seed cotton per hour; the gin of 25 saws cleaning only 10·71 lbs. per man in the same period.

Its cost made of iron, laid down in India, would be (3*l.*) three pounds, but if constructed of wood and made up in that country the expense would be much less, as in such case it would only be necessary to supply the saws from England.

296—Sess. 2.

3 M 3

The

I
Bengal and
North Western
Provinces.

The association having resolved to submit the machines to a public trial, I have the honour to acquaint you that it has been arranged that a meeting of parties interested in the cotton trade shall be held for that purpose in the Town-hall here on Thursday the 28th instant, at 11 o'clock in the forenoon, his worship the Mayor of Manchester presiding, and upon which occasion the association respectfully request that your Honourable Court may be represented by deputation, in order that the real merits of the undertaking may be more fully ascertained; and should the machines in question, to which the association have given the name of "Cottage-Gins," meet general approval, the association venture to hope that your Honourable Court will use its influence and authority to promote their general introduction, believing that they supply a great desideratum towards the full success of the attempts to promote the cultivation of cotton so laudably undertaken and so perseveringly conducted on the part of the Honourable East India Company.

I have, &c.

(signed) *Malcolm Ross*, Vice-President.

J. C. Melvill, Esq., Secretary to the Court of Directors of the East India Company.

Sir,

In conformity to the instructions intimated in the letter of the 21st September from Mr. Dickinson to the vice-president of the Commercial Association of Manchester, I proceeded last week to that town, and attended the public meeting held in the town-hall on the 28th September, at which the cottage-gins for cleaning cotton were submitted to trial. I subsequently made private examinations of the structure and working of these machines. Before describing these, I may state that I found the greatest anxiety continuing to prevail respecting the great importance of a supply of cotton being obtained from more than one country, and also that India should supply a larger proportion of the kinds from American seed than she had hitherto done.

Suitable as is the saw-gin for the cleaning of American cotton, it is often stated to be unfit for that which is the indigenous growth of India. But what is true of an instrument in one state, ceases to be so when it has been modified and improved. This is the case with the saw-gin, as applicable to the cleaning of India cotton; for the Government experiments in cleaning the native cotton with the slightly modified saw-gin, at Coimbatore, Dharwar, Broach, and in Khandeish, have proved its perfect feasibility; and this as judged of by native cotton cleaned by the saw-gin selling at a higher price than that cleaned by the churka, and also by the opinions of manufacturers who have purchased and used the cotton. But the seed cotton requires to be picked clean before being ginned, otherwise the dried leaf, bracts, &c., become ground up into fragments, and these stick to the cotton in every subsequent process of its manufacture. It is unnecessary, also, to dilate on the objections which have been made to the saw-gin, when worked by hand, as ineffective and expensive; for these objections apply to the imperfect instrument moved by cog-wheels originally sent from this country. When bands and a fly-wheel were applied in India to work the instrument, it was found to be so greatly improved as to be both easily and profitably worked. It may be sufficient to state, that the Commercial Association of Manchester, who, in their president's letter of the 5th February 1847 to the chairman of the Court of Directors of the East India Company, and writing of saw-gins, "advise that none of these machines should be hand-gins," is the very body which has caused these cottage-gins to be prepared, as most suitable to the growers of cotton, and especially of American cotton, in India.

In April last I was applied to by the secretary of the above association to know whether they could be favoured with the loan, from the India House, of a saw-gin, as they wished to construct a smaller one for the use of the natives of India. As no saw-gin had been retained, either of those brought from America or of those made here, I sent, as I intimated to you at the time, a model of the saw-gin which had been made by Mr. Frost, the engineer, now employed in the district of Dharwar. I also recommended the association to consult Mr. Petrie, the engineer, who had then lately returned from Coimbatore, as one well acquainted with the practical working of the saw-gin, and who would be able to direct attention to such points as would ensure the efficient working of the instrument. Mr. Petrie was sent for by the association in the month of July, when he "carefully examined and subjected to trial the two small gins fitted up under the auspices of the association for cottage use in India."

The first trials were not very satisfactory, from a wrong construction of the bars, which impeded the free action of the cotton-roll, and a deficiency of curve in the bars, which made the machine work unsteadily. He suggested the construction of new and stronger bars, and with more curve than the first ones, or than those of the model. After these alterations he found the working of the gins highly satisfactory, and reported most favourably of the success which attended the final experiments.

The association have had altogether four of the cottage-gins constructed, each containing only four saws, each differing from the other either in the material used in their construction, or in the mode by which motion is communicated to the saws and brushes. Each gin contains only four saws of the kind which Mr. Petrie had, after careful experiment, found most useful when in India.

No. 1.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 463

I.
Bengal and
North Western
Provinces.

- No. 1. A saw-gin of four saws, constructed chiefly of wood, and moved by bands and wheels.
- No. 2. Ditto - - ditto - - ditto - - of iron, and similarly moved.
- No. 3. Ditto - - ditto - - ditto - - ditto, and moved by cog-wheels.
- No. 4. Ditto - - ditto - - ditto - - ditto, and moved by pinion and wheel.

All are nearly equally efficient; the wooden one less so than the others, probably from the greater amount of friction; but I know not why, if the internal works are the same, it should not be as efficient as the others, especially if iron rollers were used instead of wooden ones for the bands to pass round. It is very likely to come extensively into use in India, from the facility with which it might be made there with wood seasoned to the climate. The machines worked by cog-wheels, and by the pinion and wheel, are not, I conceive, on this very account, so well suited to India, and do not offer any greater advantages than No. 2, which is constructed chiefly of iron, and moved by a band passing round three small wheels. This instrument, from its small and compact size, little weight, the ease with which it is so efficiently worked, and its comparative low price (about 3 l.), is well suited to fix the attention of the native cultivator, who is readily frightened by the sight of a large and expensive instrument, which, in addition to extensive premises, necessitates the employment either of many men or cattle to put it in motion.

The cottage-gin under consideration is only 33 inches in length and 27 inches in height, with a breadth of 6½ inches, but of 16 inches, if including the handles. It may be worked by a single man or boy, in a room or temporary shed which is not more than 12 feet long by 6 feet broad. A feeding-basket, which holds about 4 lbs. of seed cotton, has been lightly fixed on the left-hand side, so that the same person may both work and feed the gin, and he would have occasional relief from his labour when replenishing the basket.

Mr. Jamieson, the mechanical engineer employed by the association, has made several improvements in each of the four machines. These improvements will, of course, be incorporated in any future instruments which he may have to make. Thus, besides the greater curves of the grates, he has made these of steel at the points, where they might come in contact with the saws.

These saws may each and all be taken off, and again replaced with great ease by almost any one; so also the brushes, being fixed by screws, may readily be taken off, and again replaced, if they should require repair, &c. The saws can also be readily adjusted by a horizontal motion, if they should by any chance be out of trim. The driving-band has also an adjusting screw, by which it may be tightened or slackened, as the case may require.

To appreciate the advantages of the cottage-gin, it is necessary to allude to the means at present adopted in India for cleaning cotton. These are the churka and foot-roller. The latter is employed only in the Southern Mahratta country. Of the churka, which is a superior instrument, there are several varieties. The Madras churka and the Guzerat churka, as well as the foot-roller, are all represented in the papers published by the Court in 1836, relating to the production of cotton wool in India. In conformity to the American practice, large 60-saw gins, moved by horse or cattle power, were established in India at Agra, at Broach, and at Coimbatore. The machines at the two latter places are still at work with bullocks; but it was early ascertained, in the Southern Mahratta country, that small gins, as, for instance, with from 18 to 25 saws, made at an expense of from 150 to 200 rupees in India, worked by two parties of five men, relieving each other alternately, were much better suited to India. Mr. Petrie, in estimating the value of the cottage-gin, considered it sufficient to compare its working with the hand-gin and the churka, as in the following Table:

	Quantity Cleaned per Man per Hour.	Price of Cleaning per Candy of 500 lbs.	Cost of Machinery on every Bale.
	Lbs.	Rs. a.	d.
Hand-gin - - - -	10·71	3 14	3 ½
Cottage-gin - - - -	13·7	3 4	3 ½
Churka - - - -	3·	5 -	- ½

Subsequent to Mr. Petrie's examination of the two cottage-gins which had then been made, considerable improvements had been effected in their construction by Mr. Jamieson, so that a greater quantity of work could be done with no greater expenditure of labour. All the four machines were set to work at the public meeting, and each cleaned 4 lbs. of seed cotton in from 12 to 15 minutes. The spinners and manufacturers who were present seemed well satisfied with the working of the machines, as well as with the manner in which the cotton had been cleaned.

The experiments in public having been made in the midst of some confusion, I expressed a wish to have them repeated in private with the two machines which I thought were upon the whole best suited to India. This was readily complied with, and the experiments were carefully repeated in my presence, accompanied by Mr. Turner, Mr. Fleming, and Mr. James

I.
Bengal and
North Western
Provinces.

James Lees, who has taken the most active part in the getting up of these cottage-gins, was happy to find that the working of both machines was even more satisfactory than has been reported by Mr. Petrie. Here I may observe, that though the gins were placed on their cases to allow the labourers to work them standing, the natives would probably prefer to work them sitting on the ground.

No. 1, on the wooden gin, cleaned 4 lbs. of kupas in four minutes, yielding 1·4 clear cotton, and 2 lbs. 12 oz. seed.

No. 2, on the iron gin, cleaned 4 lbs. of kupas in 12 minutes, yielding 1·4 clean cotton, and 2 lbs. 12 oz. seed.

that is, 31 per cent. of clean cotton was obtained from both instruments, the wooden one cleaning at the rate of 17 lbs. an hour, and the iron one 20 lbs. an hour, though Mr. Petrie found the original machine yielding only at the rate of 13·71 pounds an hour. All these experiments were made with American seed cotton, which the Commercial Association had caused to be imported, as they are themselves most anxious for the extended cultivation of American cotton in India. But Mr. Burn, the brother of Dr. Burn, late superintendent of cotton culture in Broach, and who had himself been employed in superintending the cotton-cleaning machines in that district, fortunately visited Manchester for the express purpose of seeing the cottage-gins at work, and brought with him some kupas or seed cotton from Broach. This he tried in the above iron gin, No. 2; or that in which the American cotton had already been cleaned, and found it well suited for cleaning the native cotton, though, from the small quantity of kupas, the proportion of work done could not be so easily determined. The only defect which I could perceive with either kind of cotton was that the seeds were not so perfectly cleaned as with the churka. This has also been found to be the case in India, when cotton seed cleaned by the churka yields about 25 per cent. of cotton, while the same cotton seed if cleaned by the saw-gin, would hardly yield 22 per cent. of clean wool. But this advantage in favour of the churka is rather apparent than real, for much of what is separated consists of short wool, leaf, sand, and other trash, which is got rid of in the willowing process of the factory, as well as by the American thrasher as now employed in Coimbatore and Tinnevely; as this, according to Dr. Wight, removes from $2\frac{1}{2}$ to 3 per cent. of trash from even very clean samples of churkaed cotton. That the cottage-gins are very effective instruments is evident from their separating 31 per cent. of clean cotton from the seed, but these were somewhat lighter than if they had been quite fresh. But on the other hand, as the seeds were somewhat shrivelled from dryness, the saws probably acted less equally, and therefore less effectually upon them, than if they had been in a fresh and plump state.

Having shown the efficiency as well as easy working of these cottage gins, it is desirable to inquire whether they are suited to the natives of India. In the first place, these instruments, like the original saw-gin, are especially fitted for the cleaning of American seed cotton, which is not so easily cleaned by the Indian churka. American cotton is not only the most in request at Manchester, but it is also in favourable climates the most profitable for cultivation in India. For in addition to bringing a higher price, both in the Bombay and English market, it will, with very little extra care in the culture, yield a large quantity of seed cotton per acre, while this seed cotton yields about nine per cent. more of wool than does the native seed. Its cultivation, however, has not spread so rapidly, except in Dharwar, as might have been expected. This is probably owing to the natives themselves not being able to spin it so easily as their own cotton; while the seed has been stated, I believe incorrectly, to be unfit for feeding their cattle. Part of the delay, however, attending the extension of this culture appears to me to have been owing to the difficulty of cleaning the cotton when grown. As seed cotton is a marketable article only to a particular class, the ryot has no other resource than to sell it to the middleman on his own terms, who will allege the difficulty of cleaning and finding a market for a new produce as a reason for giving a low price for it, if he should agree to buy it. The ryot, moreover, has no inducement to pick his cotton clean, as he does not get a better price for what to the middleman has little value, as he systematically adulterates what he may have bought comparatively clean, with the object of increasing its weight. But if the ryot had the means within his reach of cleaning his cotton as fast as he picked it, he could then avail himself of the advantages of a more extensive market, and be able himself to receive the higher prices which an improved article may be expected shortly to command. The cottage-gin is, in my opinion, calculated to effect this object, for its cheapness will allow of its being much more extensively distributed, while a man's own family will be able to work it. This will give the cottage-gin a considerable advantage for small farmers, as even the 25-saw gin requires the labour of 10 men to work it efficiently. Its adoption by the natives will no doubt be facilitated in consequence of the superiority of the saw-gin for cleaning cotton being already known in the collectorates of Coimbatore, Dharwar, Belgaum, and Broach, as the engineers and planters sent out by the Court made up many saw-gins, which have been distributed, and even bought by the native dealers in some of the above districts.

But as the introduction of such an instrument would in any case be slow, I would recommend that the cottage-gin should be substituted for the money prizes which have been authorised by the Court to be given by collectors of districts for the extension of the culture of American cotton. It might be given as a reward to those ryots who have already cultivated the American cotton to any extent, and for two or three years. While to those who would engage to cultivate a certain quantity of American cotton, to be determined by the local authorities, I would lend one of those gins free of charge for the first year, and then give it

it as a prize to a ryot going on with the cultivation for three seasons. By this means a considerable number of cottage-gins might be advantageously distributed in the districts of Coimbatore, Dharwar, Belgaum, and Broach. Some others should be sent to the Governments of Bengal, Madras, and Bombay as models, and for introduction into such places, as more likely to adopt the culture of American cotton. The Court would thus have an opportunity of rewarding the ingenious mechanic for the expenditure of much time and labour on a subject in which they have always taken the greatest interest, especially as he cannot hope for many subsequent orders, because the engineers employed in India have taught the natives to make saw-gins of different sizes, which are as effective and much cheaper than those sent either from this country or from America.

Though I have dwelt particularly on the fitness of the cottage-gin for cleaning American cotton, it appears it is nearly equally useful for cleaning indigenous cotton, when this has been clean picked, and has not been allowed to hang on the bushes until both it and the seed have become dried up. But I have forbore dwelling on this point of the subject, as the recent despatches from India bring intelligence of the construction at Calcutta of a machine by Mr. Mather which is intended to clean indigenous cotton. In this instrument the revolving brushes of the saw-gin seem to have been attached beyond the cylinders of the Indian churka, and the mode of giving motion to these has been altered. The machine which has been produced (costing about 60 rupees) has been favourably reported of by Mr. Simms, the consulting engineer to the Indian Government, while the owners of the cotton mill at Fort Gloster speak well of the cotton which it has cleaned.

(signed) *J. Forbes Royle, M. D.*

East India House,
6 October 1848.

P. S. I beg to annex reports from spinners on the cotton cleaned by the cottage-gins, and which I have received since the above report was written; and I have to request that Mr. Petrie's report, dated Dundee, 15th August 1848, be sent in at the same time with the above report and those from spinners.

My dear Sir,
I HAD the pleasure on Saturday last, and now beg to hand you the enclosed reports as to the working of the cotton cleaned by the "cottage-gin." I send the several specimens to which the reports refer in a parcel per railway, and hope you will receive all safely in time for the Court to-morrow.

J. F. Royle, Esq., M. D.
&c. &c.

Manchester, 10 October 1848.
I am, &c.
(signed) *H. Fleming.*

To the Directors of the Manchester Commercial Association.

Gentlemen,
HAVING scutched and carded a sample of the cotton which had passed through the cottage saw-gin made for your association, we beg to state that the cotton was remarkably well cleaned, and the staple not at all injured by the process of ginning.

Yours, &c.
(signed) *Thos. & Wm. Mason & Son.*

To the Commercial Association, Manchester.

Gentlemen,
WE have scutched and carded a sample of the cotton which had passed through the "cottage saw-gin" made for your association, and beg to say that the cotton is remarkably clean and clear, and we could not perceive that the staple had sustained the slightest injury by the process of ginning.

Ashton-under-Lyne,
9 October 1848.

Yours, &c.
(signed) *James Knott & Son.*

To the Chairman of the Manchester Commercial Association.

Sir,
WE have had submitted to us some of the cotton cleaned by Messrs. Jamieson's cottage saw-gin, and on examination, both previous to and after scutching, carding and spinning, cannot perceive that it has sustained the slightest injury by the ginning process. We consider it clean and clear from shell or leaf, and quite equal to, if not cleaner, than the generality of American cotton.

Ashton-under-Lyne, 9 October 1848.
We are, &c.
(signed) *Thos. Mellor & Sons.*

I.
Bengal and
North Western
Provinces,

To *J. C. Melvill*, Esq., Secretary to the Honourable Court of Directors of the
East India Company.

Dundee, 15 August 18

Sir,

A SMALL gin having been fitted up and set to work in the Commercial Association rooms at Manchester, I was requested to examine the machine, and give an opinion on its merits. I have the honour to transmit for your perusal a copy of the report.

I have, &c.
(signed) *J. Petrie*.

To *H. Fleming*, Esq., Secretary to the Commercial Association, Manchester.

Sir,

IN accordance with the request of your association, contained in your letter to my address of date 12 July 1848, relative to a machine for cleaning cotton, I beg to state that I have carefully examined and subjected to trial the two small gins fitted up under the auspices of the association for cottage use in India.

The first trial of these machines, owing to a wrong construction of the bars, which impeded the free action of the cotton-roll, and a deficiency of curve, which made the machine work unsteadily, was not a very satisfactory one. At my suggestion, Mr. Lees, with whom the idea of a cottage-gin originated, had the front of one of these machines taken down and reconstructed with new bars, much stronger, and with more curve than the first ones. The experiments, after these alterations were made, were highly satisfactory, and I have no doubt but the machine, when all its parts have been properly adjusted, will be found well adapted for the purpose intended.

A comparative statement of—1. The work performed in a given time by this and by other machines in common use in India; 2. The cost of labour; 3. The wear and tear of machinery; and, 4. The expense of house-room, will perhaps give the best ideas of the merits of this small saw-gin.

1. The work performed in a given time :

1st. A hand-gin of 25 saws, worked by eight men, being two relays of four men each, will clean 100 lbs. of seed cotton in 70 minutes with ease, or 3.43 lbs. per saw per hour, or 10.71 lbs. per man per hour.

2d. The cottage gin of four saws, worked and fed by one man, will clean 16 lbs. of seed cotton in 70 minutes, or 13.7 per man per hour.

3d. The common churka, worked by one man, or a woman, or a boy, will clean about three lbs. of seed cotton per hour.

2. The cost of labour :

1st. The cost of cleaning a candy of 500 lbs. of cotton wool by the hand-gin is, on an average, Rs. 3. 14.

2d. The cost of performing the same work by the cottage gin (assuming that one man can continue at the same rate of 13.7 lbs. for five hours and a half, in which time he will have cleaned about 75 lbs. of cotton, which is a good day's work) will be Rs. 3. 4, being at the rate of 1a. 8p. per man per day, the pay given to coolies employed on the hand-gin.

3d. The average price of doing the same work by the churka is about five rupees.

3. Wear and tear of machinery :

1st. A hand-gin, worked by two sets of coolies, will clean 1,000 lbs. of seed cotton per day, and (allowing 300 working days to the year), 300,000 lbs. in one year. Take 20 per cent. per annum for repairs and depreciation of machinery, or, in other words, the machine in five years will require a sum to have been expended on its repairs, which, added to the depreciation which it will have sustained, will equal in amount its original cost. In that time it will have cleaned 1,500,000 lbs. of seed cotton, or 1,500 bales, of 300 lbs. each, of wool. The price of an Indian-made gin, with driving-wheel, is about 20 *l.* The cost of machinery therefore will be 3 $\frac{1}{2}$ *d.* per bale of cleaned cotton.

2d. The cottage-gin, with a relay of coolies, will clean 150 lbs. of cotton per day, or, employing the same figures as in the former case, 225 bales, of 300 lbs. each, in five years. The cost of this machine in England is 2 *l.* 10s. or (allowing 10s. for freight, which is above the mark, as the measurement is only three and a half cubic feet, and the weight 112 lbs.) in India 3 *l.* The cost of machinery therefore will be 3 $\frac{1}{2}$ *d.* per bale.

3d. An Indian churka will clean 25 lbs. of seed cotton per day, or, taking the same figures as in the former cases, 37 bales, of 300 lbs. each, in five years. The cost of a churka is 12 annas. The cost of machinery therefore will be $\frac{1}{2}$ *d.* per bale.

The expense of house-room :

The saving under this head by the introduction of the small gin, although it must be very considerable, cannot be so easily expressed in figures. The hand-gin requires a house of tolerable dimensions for its accommodation, while the other is so small that a common hut will be large enough for its being set to work in.

The

The rollers together

Food
2 - 189 900

hat it willons may, for convenience sake, be brought
n of rollers to
oller, thus giving

	Lbs.	Price of Cleaning, per Candy of 500 Lbs.	Cost of Machinery on every Bale.
		Rs. a.	d.
Hand-gin	10·71	3 14	3 ½
Cottage-gin	13·7	3 4	3 ½
Churka	3·	5 -	- ½

The advantage shown in the first two columns is considerably in favour of the cottage gin; while in the third, viz., the cost of the machine, it is greatly in favour of the churka.

In order to form a correct opinion on this point, we must compare the cost of labour by each of these machines. In the table we find that 500 lbs. of cotton cleaned by the churka costs five rupees, while by the cottage-gin the cost is only Rs. 3. 4; thus a saving of one rupee twelve annas is effected on every candy by the use of the latter. The cottage-gin, according to our estimate, cleans 150 lbs. of seed cotton per day, or 21 candies of cotton wool in a year; the saving in one year therefore by the use of the cottage-gin, as compared with the churka, is 36 rupees, which is six rupees more than the original cost of the machine.

It is desirable that these machines should be as perfect as possible before they leave this country; I would therefore suggest the propriety of your association having them worked for several days on both Indian and American seed cotton, in order accurately to test their efficiency, and in particular to ascertain whether by an alteration in the pitch of the bars, or a different arrangement of the mote-board, the seeds are capable of being better cleaned. This was the only respect in which your gin appeared to me to be inferior to the larger ones. It is true that the out-turn, according to our experiments, was very good, being 29½ per cent. of wool to seed cotton; but it must be taken into consideration that the cotton we had for working on was old, and the seeds consequently much lighter than if they had been the crop of last year, which would make a considerable difference in favour of a large out-turn. Be that as it may, the seeds did not appear to be so clean as they ought to have been. The native cotton merchants of India are close calculators, and if the out-turn by your machine is half per cent. less than that by the machines now in use, it runs the risk of never getting a fair trial; it matters not how much cleaner or more quickly the work is performed, the prospect of a deficiency in quantity will prejudice them against it at starting. If American cotton becomes an article of extensive cultivation in India, this gin will be of great service. The hand-gin is too expensive for the common native, and their own machine, the churka, does not answer on that description of cotton. In making up gins of this size, the following remarks may be useful.

1. The best speed for a saw of 10 inches diameter is from 130 to 150 revolutions per minute, according to the kind of cotton being ginned.
2. The periphery of the brush, if it contains eight leaves, ought to move five inches for every inch of the saw; or your brush, which is 16 inches diameter, ought to make three revolutions for every one the saw makes.
3. The curve of the bars ought to be considerably behind the centre line of the saw, so that the roll of seed cotton when undergoing the process of ginning may rest well on the top of the saw.
4. All large gins have two sets of bars; the back bars prevent any seeds that may have passed the front bars from being caught by the brush and blown into the lint room amongst the clean cotton.
5. Saws of 8-inch diameter have been found to answer well in hand-gins; these might be introduced with advantage in the cottage-gin.

Following out Mr. Lees' idea, I shall send you by-and-bye a sketch of a wooden gin, different from yours, which the natives can easily imitate, and which I think would answer well. If it were adopted, the saws only would require to be sent from this country.

(signed) James Petrie.

I.
Bengal and
North Western
Provinces.

to the Honourable Court of Directors of the East India Company.

My dear Sir,

IMMEDIATELY on receipt of your copy of a letter which he has addressed to you, I have immediately set up and set to work in the Commercial Association, and give an advanced copy of the report to you. I have also arranged for your perusal a copy of the report on the original estimate, in consequence of your advice, such as moveable "steps" for altering the position of the grate, of a nature much more durable; a cover for the machine, in the first-made gins. The machines have been re-arranged by their introduction, while the cost has not been increased. I think it would be unwise to send the gins *via* London; the carriage by canal from hence to Liverpool being only 8s. 4d. per ton, and freights at the latter place being quite as low as at London. Each case would weigh 2½ cwt.

We do trust that the Honourable Court will see fit to give the order, and I can only say that the machines shall be carefully watched and tested in every stage by myself and other gentlemen connected with the association; so that on their arrival in India they shall be found as complete as possible.

You will please to bear in mind that the gin which I forwarded to your address on the 4th, being driven by spur-wheels, will not show all the improvements alluded to.

I am, &c.
(signed) Hugh Fleming, Secretary.

(Copy.)

Oldham Road Foundry, Ashton-under-Lyne,
7 October 1848.

Sir,

I WILL make you 200 saw-gins, the same as the samples shown at your rooms at Manchester, for the net sum of 3*l.* each, including packing-cases.

Two gins to be packed in each case, and delivered at the railway station, here or in Manchester.

H. Fleming, Esq., Secretary,
Commercial Association, Manchester.

I am, &c.
(signed) For Wm. Jamieson.
Thomas Parry.

P.S.—I can deliver 50 in six weeks, and 100 in three months, from the date of the order.

Manchester Commercial Association,
28 February 1849.

Sir,

I HAVE the honour to acquaint you, for the information of the Court of Directors of the Honourable the East India Company, that in accordance with the instructions conveyed to me in your letter of the 7th February, I have forwarded to Liverpool 20 cases, each containing two "cottage saw gins," as per invoice, copies of which I have the honour to transmit. Of these packages, eight have been shipped per the "Duke of Lancaster," which sailed for Bombay on the 26th instant, and 12 per the "La Belle," for Madras, now ready for sea.

It will be observed that the number of machines shipped is 10 short of that originally intended, which has arisen from its having been found necessary to return a number of defective saws to Sheffield for alteration. Mr. Petrie, however, informs me that 50 more saw gins will be ready for India in the course of the ensuing month.

I further enclose a memorandum as to the mode of setting the gins to work, which has been prepared by Mr. Petrie, in compliance with the desire expressed in the last paragraph of your letter, now under acknowledgment.

James C. Melvill, Esq., &c. &c. &c.
East India House, London.

I have, &c.
(signed) Hugh Fleming, Secretary.

20-1899
 Food
 prices,
 Krishna
 (1853-67-1873-18)
 1876
 1876
 1876

hat it will receive or deserve public attention Council, Bombay
 n of rollers for the saw might possibly lead
 nder, thus giving it a capacity of drawing

I.
 Bengal and
 North West
 Provinces.

I am, &c.
 and owned) saw gin, four spare
 and three spare bands.

Set No. 2.
 to 3, each containing two iron saw gins.
 containing one iron and one wooden gin, four spare saws, four
 , and three spare bands.

igned to the Right Honourable the Governor in Council,
 iras, shipped per "La Belle."

Set No. 3.
 to 3, each containing two iron saw gins.
 containing one iron and one wooden saw gin, four spare
 brush leaves, and three spare bands.

Set No. 4
 to 3, each containing two iron saw gins.
 containing one iron and one wooden gin, four spare saws,
 brush leaves, and three spare bands.

Set No. 5.
 Three cases, marked E No. 1 to 3, each containing two iron saw gins.
 One case, marked E No. 4, containing one iron and one wooden gin, four spare saws,
 four screw keys, sixteen spare brush leaves, and three spare bands.

MEMORANDUM of Information as to the Setting and best Mode of working the "Cottage Saw Gin."

The first thing to be observed in setting these machines for working is, that all the feet rest on the bench or block of wood on which they are to stand. When this point has been determined, they are to be fastened down with common inch screws, for which provision is made. The eye is a sufficient guide in setting them level, as they will do their work as well at a slight angle as when carefully adjusted with a spirit level.

The second operation is to clean the tallow off the saws and bars; this is rather a tedious business: every tooth of the saw requires to be quite clean before the gin will do its work. A carpenter's chisel or a large knife will take off the thick coating, and a piece of cloth saturated in cocoa-nut oil will do the rest. The oil must afterwards be wiped off.

An engraving is attached to every gin, which shows distinctly how the driving wheel and band is to be put on.

In starting new gins, I have found it necessary to work them for an hour or two on inferior cotton; and, in order to take the roughness off the teeth of the saws, a handful or two of dry sand may be passed through. This does no harm.

The machines are so constructed, that the grating, or hopper, may be moved up or down, backwards or forwards, so as to give the saw more or less hold of the cotton, according to the fancy of the planter or driver; thus, a gin may be made to do light or heavy work to suit the driving power. If a man is the driver, it may be set to do two pounds of cotton in five minutes; if a boy or woman, it may be altered to do two pounds in nine or ten minutes; but these experiments should not be tried till people become conversant with the subject. Every gin has been tried and adjusted to do a fair amount of work, viz., two pounds of seed cotton in six minutes.

The gins are arranged in sets of eight, viz., seven of iron and one of wood. The wooden one being intended as a model for the natives to imitate, it would be advisable to have them distributed in India in sets; they are invoiced with this view; a letter being the distinguishing mark for each set, thus, A No. 1, A No. 2, A No. 3, A No. 4, B No. 1, B No. 2, &c. The fourth case in each set contains the wooden gin. I may take this opportunity of observing, that the gins which have left for India, viz., 16 for Bombay and 24 for Madras, are constructed for American cotton only. I am now making experiments with a view to having the remainder of the order constructed for cleaning either the American, Bourbon, or native Indian varieties.

(signed) Jas. Petrie.

I.
Bengal and
North Western
Provinces.

To the Honourable the Court of Directors of the East India Company
on receipt of your letter of the 23d May last, we
Honourable Mr. Jamieson requested to examine the
IN continuation of the 9th para. of our letter for your perusal
have the honour to transmit the accounts which have been received
from Mr. Price at Dacca, and Mr. Bell at Agra, on the working of the cottage
saw-gins referred to in your Honourable Court's despatch, No. 5 of 1849, dated
the 27th June.

We have, &c.
(signed) J. H. Littler.
Wm. Gomm.
F. Currie.
J. Louis.

Fort William, 27 December 1850.

(No. 541.)

From the Under-Secretary to the Government of Bengal to W. Grey, Esq., Under Secretary
Government of India, Home Department; dated Fort William, 31 May 1850.

Sir,

I AM directed by the Deputy Governor of Bengal to forward copies of reports received
from the Sudder* Board of Revenue and from the Government† of the North Western
Provinces on the working of the cottage saw-gins sent out from England, for communication
to the Honourable the Court of Directors, as requested in the 3d para. of their despatch,
No. 5 of the 27th June 1849, a copy of which was received with your letter, No. 483, dated
the 18th August last.

I have, &c.
(signed) W. Seton Karr,
Under Secretary to the Government of Bengal.

From H. Hamilton Bell, Esq., Agra, to R. Thornton, Esq., Assistant Secretary to the
Government, North Western Provinces, Head Quarters.

Sir,

I BEG to acknowledge your letter, No. 1285 of 1850, forwarding copy of a letter from the
officiating Under Secretary to the Government of Bengal, dated 2d instant, No. 52, together
with copy of a report from Mr. Price, Superintendent of the Dacca cotton farm, on the
working of a saw-gin received from England in November last.

Your letter further expresses the Lieutenant-governor's desire that I should state my
opinion of the merits of the cottage saw-gin entrusted to my charge.

I do not understand whether Mr. Price's report refers to the cottage gin; I am inclined
to infer that this is not the case, but if it does, the objections he offers to the machine do not
coincide with my observation on the working of those delivered to me; I do not find that
the seed of our indigenous cotton passes through the gratings.

The objection to the principle of the machine, so far as my observation goes, lies in the
inapplicability of the saw-gin to our short-stapled cotton. In all the trials I have made, the
cotton is so much cut as to be unfit for spinning. As to the details, I concur in the remark
that the space in which the kupas revolves, when in contact with the saw, is too contracted,
and does add to the trouble of the person feeding, and diminishes the rapidity of movement
and its out-turn of ginned cotton. I should remark, that the quantity of work it performs at
Dacca greatly exceeds any result I have been able to obtain here, and strengthens my
suspicion that Mr. Price reports, on a different machine, unless the native chuika there
differs materially from that in use in these provinces. He states that the machine will do
the work of 30 chukas, which may be taken as nearly 300 lbs. per day; for although my
average, with from 400 to 500 chukas at work at the same time, gives only a return of 8 lbs.
per churka; this arose in part from the unequal time employed by different individuals, some
strong men reaching 16 lbs. for a full day's work.* I can also hardly conceive such an out-
turn from four saws. The American saw-gin with 60 saws, when in work here, gave returns
very disproportionate, varying from 400 to 440 lbs., and even in Broach they merely reached,
according to Dr. Burn's statement, 656 lbs. per day, which is scarcely more than twice the
return of the cottage gin with four saws, according to Mr. Price.

On the whole, my impression is, that the cottage gin does not answer its proposed object;
or afford any facility for improvement of the native cotton for the home market. In its
present

* Letter from Mr. Price, 16 February, to Mr. Mytton.
† Mr. Bell's letter, 1 May, and reply to it.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 471

present condition I do not think that it will receive or deserve public attention; but is very prettily got up, and the substitution of rollers for the saw might possibly lead to a self-feeding churka by roughening the larger roller, thus giving it a capacity of drawing the kupas within the action of the rollers.

I.
Bengal and
North Western
Provinces.

Agra, 1 May 1850.

I am, &c.
(signed) H. Hamilton Bell

(No. 1561 of 1850.)

From J. Thornton, Esq., Secretary to the Government, North Western Provinces, to
H. H. Bell, Esq., Agra.

Sir,

In conveying the thanks of the Lieutenant-governor for the report furnished by you under date the 1st instant, on the merits of the cottage saw-gins entrusted to your charge, I am desirous to request that you will place two or three of the cottage gins at the disposal of Sir R. Shakespear, at Gwalior, if that officer is desirous to have them. Revenue Depart-
ment.

2. With reference to the concluding para. of your letter, his Honour begs that you will consider yourself at liberty to alter experimentally one of the gins by the substitution of rollers for saws, if you feel disposed to do so.

Head Quarters,
23 May 1850.

I am, &c.
(signed) J. Thornton,
Secretary to the Government, N. W. P.

(True copies.)
(signed) R. Thornton,
Assistant Secretary to Government, N. W. P.

(True copies.)
(signed) W. Seton Karr,
Under Secretary to the Government of Bengal.

(No. 8 of 1850.)

From J. O. Price, Esq., Government Cotton Planter, to R. H. Mylton, Esq., Officiating
Commissioner of Dacca.

Sir,

In reply to your letter of the 28th December 1849, No. 226, respecting the working of the new saw-gin, I have the honour of informing you that I find it well suited for cleaning the American and Bourbon kinds of cotton, but the gratings through which the saws work are too wide for cleaning the indigenous kinds, the seed of which is very small, and in consequence of which a great portion of it passes through with the wool; this evil in preparing others for ginning that description of cotton, could be easily avoided, but in doing which particular attention would be required in the arranging of the saws, so as to make them revolve exactly true, to prevent the teeth of the saws coming in contact with the edge of the bars; if this was effected, and its price come within their means, it would make it a very valuable machine to the natives in cotton-growing districts. The speed of this one in cleaning exotic cotton is good, in fact, equal to that of the large American gins in proportion to the number of saws, but eight or ten saws would be still better suited for the purpose than only four, the number in this one, for several reasons; in the first place, the same number of hands would work it, and clean double the quantity of cotton; and, secondly, it would be much easier fed from the room that the feeder would have, to scatter the cotton across the saws so as to assist them in quick ginning, besides the very small space that the cotton has to revolve in when in contact with the saws, the friction against the sides of the feeding box is very considerable. It affords me much pleasure in being able to report to you that three hands are able to clean as much cotton in a day with this small gin as 30 hands are capable of doing with the Dacca native churka, and with a few additional saws, I am confident the proportion would be greater.

Dacca Government Farm,
16 February 1850.

I have, &c.
(signed) J. O. Price,
Government Cotton Planter.

Sudder Board of Revenue, Fort William,
15 March 1850.

(True copy.)
(signed) G. Plowden, Secretary.

(True copy.)
(signed) W. Seton Karr,
Under Secretary to the Government of Bengal.

I.
Bengal and
North Western
Provinces.

(No. 406.)

From *W. Grey, Esq.*, Under Secretary to the Government of India to *W. Seton Karr, Esq.*,
Under Secretary to the Government of Bengal.

Home Dept.,
Revenue.

Sir,

I AM directed to acknowledge the receipt of your letter, No. 541, dated the 31st ultimo, forwarding copies of reports from Messrs. Price & Bell, on the working of the cottagè saw-gins sent out by the Honourable Court of Directors.

2. In transmitting these reports to the Honourable Court, the President in Council is desirous that there should be no uncertainty as to the quantity of work which one of these machines can perform daily; Mr. Price says merely "that three hands are able to clean as much cotton in a day with this small gin as 30 hands are capable of doing with the Dacca native churka." But his Honor in Council would wish to know exactly what the quantity is that 30 hands are capable of cleaning with the Dacca native churka, and how many churkas are worked by 30 hands. His Honor in Council understands Mr. Price to mean that three hands are necessary to work one of the cottagè saw-gins.

3. The President in Council wishes also that Mr. Price should be asked whether the further experience which he may have had of the working of the saw-gin subsequent to the date of the last report has afforded him cause for modifying in any respect the opinions which he then expressed regarding it.

I have, &c.

(signed) *W. Grey,*

Council Chambers,
14 June 1850.

Under Secretary to the Government of India.

(No. 708.)

From the Under Secretary to the Government of Bengal to *W. Grey, Esq.*, Under Secretary to the Government of India, Home Department; dated Fort William, 27 July 1850.

Sir,

Revenue.

WITH reference to your letter, No. 406, dated the 14th ultimo, I am directed by the Deputy-governor of Bengal to forward the accompanying copy of a letter from Mr. Price to the address of the Commissioner of Dacca of the 6th instant, furnishing the information required by the Government of India relative to the working of the saw-gins.

I have, &c.

(signed) *W. Seton Karr,*

Under Secretary to the Government of Bengal.

(No. 35 of 1850.)

From *Mr. J. O. Price*, Government Cotton Planter, to *R. H. Mytton, Esq.*, Officiating Commissioner of Dacca Division.

Sir,

I HAVE the honour of being in receipt of your letter of the 5th instant, enclosing a copy of a letter from the Sudder Board, requiring further information respecting the efficiency of the working of the new cottagè saw-gin; in reply to which, I beg leave to inform you, that the one in my charge is capable of cleaning from 80 to 90 seers of cotton with seed in a day of nine and a half hours, which would give nearly one-third that quantity of clean cotton wool. The Dacca churka, with almost unceasing labour of one hand for 12 hours, is only capable of cleaning three seers of cotton, including the seed; it would, therefore, require 30 hands to clean 90 seers of uncleaned cotton; which quantity, as I have before stated, the small cottagè saw-gin, with three hands, would clean in less time.

2. With respect to any change having taken place in my opinion regarding the qualities of the cottagè saw-gin, I have pleasure in stating that I am still of the same favourable opinion that I was when I last reported on it; also of the opinion that I then expressed regarding it, namely, that it would be greatly improved by increasing the saws to that of ten instead of four, which number it now has; it would then only require the same three hands to work it which it now does, and reduce the expense of cleaning the cotton at least 50 per cent.

I have, &c.

(signed) *J. O. Price,*

Government Cotton Planter.

Dacca, 6 July 1850.

Sudder Board of Revenue, Fort William,
23 July 1850.

(True copy.)

(signed) *George Plowden, Secretary.*

(True copy.)

(signed) *W. Seton Karr,*

Under Secretary to the Government of Bengal.

TO PROMOTE THE CULTIVATION OF COTTON IN INDIA. 473

(No. 532.)

From *W. Grey*, Esq., Under Secretary to the Government of India, to *W. Seton Karr*, Esq.,
Under Secretary to the Government of Bengal.

Sir,

WITH reference to your letter, No. 708, dated the 27th ultimo, I am directed to request that Mr. Price may be called upon to report further whether he is of opinion that, with exception to the too great width of the gratings, noticed in his letter to Mr. Commissioner Mytton, dated the 16th of February last, the cottage saw-gin is equally well suited for cleaning the indigenous cotton, as for cleaning the American and Bourbon kinds of cotton. In the trials which have been carried on with the cottage saw-gin in the Agra Presidency, it has apparently been found that the short-stapled indigenous cotton has been so much cut as to be unfit for spinning.

Council Chamber, 9 August 1850.

I have, &c.
(signed) *W. Grey*,
Under Secretary to the Government of India.

I.
Bengal and
North Western
Provinces.

Home Departmen
Revenue.

(No. 1197.)

From the Under Secretary to the Government of Bengal to *W. Grey*, Esq., Under Secretary to the Government of India, Home Department; dated Fort William, 5 December 1850.

Sir,

IN reply to your letter No. 532, dated the 19th of August last, I am directed by the Deputy-governor of Bengal to forward a copy of a further report from Mr. Price respecting the qualities of the cottage saw-gin, to the address of the Collector of Luckimpore, forwarded by the Sudder Board of Revenue.

I have, &c.
(signed) *W. Seton Karr*,
Under Secretary to the Government of Bengal.

Revenue.

(No. 13.)

From *J. O. Price*, Esq., Superintendent Government Cotton Cultivation, Assam, to Captain *H. Vetch*, Collector of Luckimpore.

Sir,

I HAD the honour of receiving, on the 5th instant, your letter, with its enclosure, from Government, requiring further information respecting the qualities of the cottage saw-gin with respect to its cleaning indigenous cotton; and in reply to which I beg leave to inform you, that I am of opinion that the teeth of the saws would require to be reduced in proportion to the reduction of grating already recommended by me; but as I am aware from experience that remodelling or correcting saws for gins is a very difficult matter, and one which no person but a thorough gin-wright ever attempts in America, I am therefore induced to take the liberty of recommending to Government the necessity of having the saws prepared under the superintendence of some person perfectly acquainted with that branch of mechanism, such as the late engineer on the Combatore government farms, who had a few sets of saws prepared in England from a model sent home by him, which so perfectly answered every purpose required of them in cleaning the indigenous cotton, not only with respect to quantity, but also the quality of the cotton cleaned by them, which, when sent home, brought a higher price, I understood, than any chuika-cleaned cotton then in the English market, which is a convincing proof of the saw-gin being capable of being brought into general use in this country, at least by all parties who have the means of purchasing it, who, in fact, are the only persons likely to clean cotton to any extent in this part of India, as the ryots never clean more than what they require for their own purposes, and sell the remainder uncleaned.

Regretting that indisposition should have prevented my being able to reply to your letter sooner,

Dibrooghur, 22 October 1850.

I have, &c.
(signed) *J. O. Price*,
Supert. Govt. Cotton Cultivation, Assam.

(True copy.)

(signed) *W. Seton Karr*,
Under Secretary to Government of Bengal.

I.
Bengal and
North Western
Provinces.

N. Merchiston House, Edinburgh,
14 October 1848.

Sir,

HAVING lately received information, through Mr. Fleming, secretary to the Manchester Commercial Association, that inquiry is making at Bombay regarding the roller-gin that was made here by me, and sent out to Bombay by the Honourable the Court of Directors of the East India Company, I beg leave to inform you that I neglected last year, on receiving intimation of the machine having been sent out to Bombay, to inform you that it would be necessary to alter the wooden roller of the machine, as it was made of soft wood, and would yield and crush the seed; it was only intended by me to remain in the machine until I could get a supply of hard wood from the West Indies, which I have now obtained.

I ought at the same time also to have informed you, that I have increased the power of the back speed of the machine seven to one, and also that I have introduced cast-steel centres into the machine, which can be easily removed and replaced by new centres, if necessary.

I am also desirous of informing you, as it has been doubted, that New Orleans cotton has been well cleaned by the roller-gin by me in India, and that this kind of cotton is equally well cleaned by it as by the saw-gin; and, that at the present time I have some New Orleans seed cotton, which I find on trial the roller-gin separates from the seed completely.

I have lately observed that several cotton-cleaning machines have been made, but I trust this will not withdraw the attention and support that has been given to the above-mentioned one. The design of one of these which I have seen, consists of a direct screw-pressure over the middle of the upper roller, an error which I believe few engineers would fall into. That of another is to drive the machine with the foot. In this country this might do, but a sitting posture will be preferred by the natives of India. Another is to make both rollers of iron. This has been already tried, but the dust is found soon to wear the metal unequally and alter the true bearing of the surface of the rollers.

I have the orders to execute for other parties for these machines, and I will be prepared to receive and execute any that may be given me in the cheapest and best manner, which, as I must keep on hand the materials required, I am well prepared to do.

James C. Melvill, Esq.,
East India House, London.

I am, &c.
(signed) Robert Burn.

P. S.—The report of their experiments published by the East India Company, unparalleled in the history of any Government for length and persevering efforts, records information of which the above is a mere repetition, as would appear if that report was better attended to. The valuable information it contains would save much time and expense to many, and show them where, by availing themselves of the facts it has registered, they may not only add to, but turn these to account.