

REPORT
OF THE
Indian Cotton
Committee



1919

CALCUTTA
SUPERINTENDENT GOVERNMENT PRINTING, INDIA
1919

Agents for the Sale of Books published by the Superintendent of Government Printing, India, Calcutta.

IN EUROPE.

Constable & Co., 10, Orange Street, Leicester Square, London, W.C.
 Kegan Paul, Trench, Trübner & Co., 68-74, Carter Lane, E.C., and 25, Museum Street, London, W.C.
 Bernard Quaritch, 11, Grafton Street, New Bond Street, London, W.
 P. S. King & Sons, 2 & 4, Great Smith Street, Westminster, London, S.W.
 H. S. King & Co., 65, Cornhill, E.C., and 9, Fakh Mall, London, W.
 Grindlay & Co., 54, Parliament Street, London, S.W.

Luzac & Co., 46, Great Russell Street, London, W.C.
 W. Thacker & Co., 2, Creed Lane, London, E.C.
 T. Fisher Unwin, Ltd., 1, Adelphi Terrace, London, W.C.
 Wm. Wesley & Son, 23, Essex St., Strand, London.
 B. H. Blackwell, 50 & 51, Broad Street, Oxford.
 Deighton Bell & Co., Ltd., Cambridge.
 Oliver and Boyd, Tweeddale Court, Edinburgh.
 E. Ponsonby, Ltd., 118, Grafton Street, Dublin.
 Ernest Leroux, 28, Rue Bonaparte, Paris.
 Martinus Nijhoff, The Hague, Holland.

IN INDIA AND CEYLON.

Thacker, Spink & Co., Calcutta and Simla.
 Newman & Co., Calcutta.
 R. Cambay & Co., Calcutta.
 S. K. Lahiri & Co., Calcutta.
 B. Banerjee & Co., Calcutta.
 The Indian School Supply Depot, 309, Bow Bazar Street, Calcutta, and 226, Nawabpur, Dacca.
 Butterworth & Co. (India), Ltd., Calcutta.
 Rai M. C. Sarcar Bahadur & Sons, 90-2A, Harrison Road, Calcutta.
 The Weldon Library, 18-5, Chowringhee Road, Calcutta.
 Standard Literature Co., Ltd., Calcutta.
 Lal Chand & Sons, Calcutta.
 Higginbotham & Co., Madras.
 V. Kalyanarama Iyer & Co., Madras.
 G. A. Natesan & Co., Madras.
 S. Murthy & Co., Madras.
 Thompson & Co., Madras.
 Temple & Co., Madras.
 P. R. Rama Iyer & Co., Madras.
 Vas & Co., Madras.
 R. M. Gopalakrishna Kone, Madras.
 Thacker & Co., Ltd., Bombay.
 A. J. Combridge & Co., Bombay.
 D. B. Taraporevala, Sons & Co., Bombay.
 Mrs. Radhabai Atmaram Sagoon, Bombay.
 Sunder Pandurang, Bombay.
 Gopal Narayan & Co., Bombay.

Ram Chandra Govind & Son, Kalbadevi, Bombay.
 Mangaldas Harkisendas, Surat.
 The Standard Bookstall, Karachi.
 A. H. Wheeler & Co., Allahabad, Calcutta and Bombay.
 N. B. Mathur, Supt., Nazir Kanun Hind Press, Allahabad.
 Rai Sahib M. Guwab Singh & Sons, Muft-i-Am Press, Lahore and Allahabad.
 Rama Krishna & Sons, Lahore.
 Supt., American Baptist Mission Press, Rangoon.
 Manager, The "Hitavada," Nagpur.
 S. C. Talukdar, Proprietor, Students & Co., Cooch Behar.
 A. M. & J. Ferguson, Ceylon.
 Manager, Educational Book Depôts, Nagpur and Jubbulpore.*
 Manager of the Imperial Book Depot, 63, Chandney Chank Street, Delhi.*
 Manager, "The Agra Medical Hall and Co-operative Association, Ltd." (Successors to A. John & Co., Agra).
 Supt., Basel Mission Book and Tract Depository, Mangalore.*
 P. Varadachary & Co., Madras.*
 H. Liddell, Printer, etc., 7, South Road, Allahabad.*
 Ram Dayal Agarwala, 184, Katra, Allahabad.*
 D. C. Anand & Sons, Peshawar.*
 Manager, Nawal Kishore Press, Lucknow.*

* Agents for the sale of Legislative Department publications only.

VOLUME I.

TABLE OF CONTENTS

THE REPORT.

CHAPTER I.

INTRODUCTORY.

PARA.	PAGE.
1 Appointment of Committee and terms of reference	1
2 Procedure adopted	2
3 World's position in regard to cotton	3
4 Possibility of Indian cotton replacing American for Lancashire purposes	5
*5 Suitability of Indian cotton for hosiery yarns	6
6 Impossibility of confining the Committee's enquiries to long staple cotton	6
7 Definition of terms	6
8 Scheme of the Report	7
9 Services of Secretary	8

PART I.

CHAPTER II.

THE PUNJAB.

10 Statistical	17
11 Climate and soil	17
12 Varieties of cotton grown	17
13 Cultivation of cotton	18
14 History of the introduction of American cotton in the Punjab	19
15 Auction sales	20
16 Seed distribution	21
17 Seed farms	21
18 Agricultural aspect	22
19 Botanical work—	22
(a) American cotton	22
(b) Deshi cotton	23
21 Improvements in cultivation	24
22 Seed farms	25
23 General work on Punjab American cotton	25
24 Prospects of the extension of long staple cotton in the Punjab under irrigation	25
25 (i) The Western Jumna Canal	26
26 (ii) The Sirhind Canal	26
27 (iii) The Upper Bari Doab Canal	27
28 (iv) The five linked canals	27

CHAPTER II—*contd.*

THE PUNJAB—*contd.*

PARA.	PAGE-
29 Inundation canals	29
30 (i) Sidhnai Canal Series	29
31 (ii) Shahpur Inundation Canals	30
32 (iii) The remaining inundation canals	31
33 Irrigation projects in the Punjab	31
(i) Sutlej River Projects	31
34 (ii) The Haveli Project	32
35 (iii) The Sind Sagar Doab Project	33
36 (iv) The Woolar Lake Project	33
37 Summary of prospects of American cotton under existing and projected canals	33
38 Available river and canal supplies	35
39 Water-logging and lining of canals	37
40 Well irrigation	38
41 Recommendations in regard to staff of the Agricultural Department	38
42 Bahawalpur State	40
43 Summary	41

CHAPTER III.

THE NORTH-WEST FRONTIER PROVINCE.

44 Statistical	43
45 Climate, soil and varieties of cotton grown	43
46 Possibilities of the extension of long staple cotton under irrigation	43
(i) The Lower Swat River Canal	44
47 (ii) The Upper Swat River Canal	44
48 (iii) The Kabul River Canal	44
49 (iv) The Paharpur Inundation Canal	45
50 (v) Other sources	45
51 Recommendations in regard to staff and lines of work	45
52 Summary	46

CHAPTER IV.

THE UNITED PROVINCES.

53 Statistical	47
54 Climate and soil	47
55 Varieties of cotton grown	47
56 Cultivation of cotton	48
57 History of introduction of American cotton in the United Provinces	48
58 Botanical work—	
(a) American cotton	49
59 (b) Deshi cotton—	
(i) Mr. Leake's work at Cawnpore	49
60 (ii) Dr. Parr's work at Aligarh	50
61 General recommendations in regard to botanical work	52
62 Improvements in cultivation	53
63 General work on cotton	53
64 Prospects of the extension of long staple cotton under irrigation	54
65 (i) The Upper Ganges Canal	55
(ii) The Lower Ganges Canal	55

CHAPTER IV—*contd.*

THE UNITED PROVINCES—*contd.*

PARA.	PAGE.
66 (iii) The Eastern Jumna Canal	58
67 (iv) The Agra Canal	56
68 The Sarda Project	56
69 Well irrigation	56
70 Recommendations in regard to staff	57
71 Summary	58

CHAPTER V.

CENTRAL PROVINCES AND BERAR.

72 Statistical	60
73 Climate and soil	60
74 Varieties of cotton grown	60
75 Cultivation of cotton	61
76 History of efforts to grow long staple cotton in the Central Provinces and Berar	62
77 Work on <i>roseum</i>	63
78 Botanical work	65
79 Improvements in cultivation	66
80 Comparative profits of <i>roseum</i> and other varieties	66
81 Future policy	67
82 Prospects of long staple cotton under irrigation	68
83 Recommendations in regard to staff	70
84 Summary	70

CHAPTER VI.

SIND.

85 Statistical	72
86 Climate and soil	72
87 Varieties of cotton grown	72
88 Cultivation of cotton	73
89 History of efforts to grow long stapled cotton in Sind	73
90 Causes of failure of Egyptian and American cotton in Sind	75
91 Prospects of long staple cotton in Sind	76
92 Irrigation system of the Province	76
93 The Sukkur Barrage Project	78
94 Prospects of long staple cotton under the Sukkur Barrage Project—	
(i) The Right Bank Canal	79
95 (ii) The Rohri-Hyderabad Canal	79
96 (iii) The Jamrao Canal	80
97 (iv) The Eastern Nara Canals	80
98 Summary of prospects of long staple cotton in areas affected by the Sukkur Barrage	81
99 Canals not affected by the Sukkur Barrage	81
100 Financial aspect of the Sukkur Barrage Project	82
101 Intensity of irrigation	82
102 Water rates	83
103 Waterlogging and lining of canals	84
Prevention of <i>kalar</i>	84

CHAPTER VI—*contd.*SIND—*contd.*

PARA.	PAGE.
104 Prevalence of malaria in Sind	85
105 Future policy in regard to cotton	85
106 Botanical work	86
107 Improvements in cultivation	87
108 Establishment of pumping stations	87
109 Capitalist grants of land on perennial canals	88
110 Recommendations in regard to staff	88
111 Summary	89

CHAPTER VII.

BOMBAY.

112 Statistical	92
113 Climate and soil	92
114 Varieties of cotton grown—	
(i) Dholleras	93
115 (ii) Broach tract	96
116 (iii) Khandesh tract	97
117 (iv) Kumpta-Dharwar tract	97
118 Cultivation of cotton	98
119 History of efforts to introduce exotic cotton in Bombay	99
120 Botanical work—	
(i) Dholleras	101
121 (ii) Broach tract	101
122 (iii) Khandesh tract	103
123 (iv) Kumpta-Dharwar tract—	
(a) Kumpta and Dharwar Broach	103
(b) Dharwar American and Cambodia	104
124 Recommendations in regard to botanical work—	
(i) Dholleras	105
125 (ii) Broach tract	103
126 (iii) Khandesh tract	107
127 (iv) Kumpta-Dharwar tract—	
(a) Kumpta and Dharwar Broach	107
128 (b) Dharwar American and Cambodia	103
129 Improvements in cultivation	103
130 Seed farms and seed distribution	109
131 Future policy in regard to work on cotton	110
132 Prospects of long staple cotton under irrigation	112
133 Recommendations in regard to staff	113
134 Kathiawar and other Native States	114
135 Summary	115

CHAPTER VIII.

MADRAS.

136 Statistical	118
137 Climate and soil	118
138 Varieties of cotton grown—	
(i) "Northern" and "Western" tracts	119

CHAPTER VIII—*contd.*

MADRAS—*contd.*

PARA.	PAGE.
139 (ii) Coconadas	120
140 (iii) The Southern Districts	120
141 Cultivation of cotton	121
142 History of efforts to grow exotic cottons in Madras	123
143 Botanical work—	
(i) Westerns and Northern	124
144 (ii) Karunganni cotton	125
145 (iii) Other varieties	125
146 Recommendations in regard to botanical work—	
(i) “Westerns” “Northerns” and Karunganni	126
147 (ii) Coconadas and Cambodia	126
148 (iii) Uppam, Nadam and Bourbon	127
149 Improvements in cultivation	127
150 Seed farms and seed distribution	129
151 Prospects of long staple cotton under irrigation	130
152 Recommendations in regard to staff	130
153 Summary	131

CHAPTER IX

BURMA.

154 Statistical	134
155 Climate and soil	134
156 Varieties of cotton grown	134
157 Cultivation of cotton	135
158 Past work on cotton	135
159 Recommendations in regard to botanical work	136
160 General recommendations in regard to future work on cotton	137
161 Recommendations in regard to staff	137
162 Summary	138

CHAPTER X.

BENGAL, BIHAR AND ORISSA AND ASSAM.

163 Statistical	140
164 Varieties grown	140
165 Past work on cotton	141
166 Recommendations in regard to future work on cotton	142
167 Summary	142

CHAPTER XI.

HYDERABAD.

168 Statistical	143
169 Climate and soil	143
170 Varieties of cotton grown	143
171 Past work on cotton	144
172 Recommendations in regard to future work on cotton	144
173 Recommendations in regard to staff	145
174 Summary	146

CHAPTER XII.

PARA.	BARODA.	PAGE.
175	Statistical	147
176	Varieties of cotton grown	147
177	Past work on cotton	147
178	Recommendations in regard to future policy	148
179	Prospects of cotton under irrigation	149
180	Summary	149

CHAPTER XIII.

CENTRAL INDIA.		
181	Statistical	150
182	Climate and soil	150
183	Varieties of cotton grown	150
184	Past work on cotton	151
185	Recommendations in regard to future work on cotton	151
186	Prospects of cotton under irrigation	153
187	Summary	153

CHAPTER XIV.

RAJPUTANA AND MYSORE.		
188	Statistical	154
189	Rajputana	154
190	Mysore	154
191	Summary	155

CHAPTER XV.

GENERAL RECOMMENDATIONS IN REGARD TO AGRICULTURAL WORK ON COTTON.

192	Scope of the chapter	156
193	Botanical surveys	156
194	Selection <i>versus</i> crossing	157
195	Field tests	157
196	Improvement in yield of cotton	158
197	Seed farms and seed distribution	159
198	Demonstration	159
199	Tree cottons	160
200	Mycological aspect	160
201	Expansion of the Agricultural Department	161
202	Cost of proposals	162
203	Recruitment of the additional staff proposed	164
204	Summary	164

PART II.

CHAPTER XVI.

COMMERCIAL.

205	Marketing	167
	Unsatisfactory character of present system	167
	Cotton markets in the Central Provinces and Berar	167

CHAPTER XVI—*contd.*

COMMERCIAL—*contd.*

PARA.	PAGE.
206 Publication of cotton prices in up-country markets	169
Cost of publication	170
207 Revision of dates of payment of instalments of land revenue	170
208 Co-operative sale	171
209 Auction sales	171
210 Buying agencies	172
211 Forward sales	173
212 Standardization of weights	174
213 Measures necessary to bring about standardization of weights	175
214 Adulteration, mixing and damping of cotton	175
215 Unsatisfactory methods of picking	177
216 Remedies	177
217 Time of picking	178
218 System of payment for picking	178
219 Malpractices in ginneries and presses	179
220 Mixing of cotton with cotton waste	180
221 Mixing of different varieties of cotton	181
Prohibition of transport by rail.	181
222 Transport by road	182
223 Licensing of gins and presses	183
224 Assignment of numbers and marks to factories	184
225 Conditions on which licenses should be granted	185
226 Procedure in regard to issue of licenses	187
227 Application of the Factory Act to factories employing less than fifty persons	187
228 Withdrawal of licenses for breach of conditions and other reasons	188
229 Procedure in regard to withdrawal of licenses	188
230 The Bombay Cotton Frauds Act	190
231 Ginning and pressing pools	192
232 Saw gins <i>versus</i> roller gins	193
233 Summary	193

CHAPTER XVII.

STATISTICAL.

234 Statistical publications at present issued	195
235 The cotton forecast	195
236 Crop reporting in the United States	196
237 United States system too advanced for India	197
238 Proposals in regard to improvements in forecasts—	
(i) Submission of estimates of outturn to be handed over to the Agricultural Department	197
239 (ii) Greater use of results obtained on Government farms	198
240 (iii) Estimates submitted by primary reporting agencies	198
241 (iv) Assistance from non-official agencies	199
242 (v) Comparison with trade figures	200
243 (vi) Check of returns by Provincial Directors	200
(vii) Appointment of Assistant Directors of Agriculture for statistical work	200
244 Number and date of forecasts	201
245 Ginning, press and mill returns	201

CHAPTER XVII—*contd.*

STATISTICAL—*contd.*

PARA.	PAGE.
246 Returns from Native States	202
247 Improvements in the form of return	203
248 Office of the Director of Statistics	203
249 Summary	203

CHAPTER XVIII.

ESTABLISHMENT OF A CENTRAL COTTON TRADE ASSOCIATION IN BOMBAY.

250 The Bombay Cotton Market	205
Future markets in Liverpool and New York	206
251 <i>Kutchā khāndi</i> markets	207
252 Formation of an East India Cotton Association	207
253 Mr. Wilkinson's scheme	207
254 Views of the Bombay and Lancashire cotton trade	208
255 Preparation of a scheme	208
256 "Mutual allowance" clause and appointment of arbitrators	209
257 Trade classification of cotton	209
258 Summary	210

CHAPTER XIX.

FORMATION OF A CENTRAL COTTON COMMITTEE.

259 Lack of co-ordination and co-operation in matters relating to cotton	211
260 Formation and personnel of a Central Cotton Committee	212
261 Functions of the Committee	213
262 Staff of Committee	214
263 Formation of Provincial and Local Committees	215
264 Reply to objections to establishment of Committee	217
265 Necessity for co-ordination and co-operation	217
266 The Imperial Cotton Specialist	218
267 Trade valuation of samples	218
268 Summary	220

CHAPTER XX.

CONCLUSION.

269 Conclusion	221
--------------------------	-----

APPENDICES.

APPENDICES.

I Itinerary of the Indian Cotton Committee	223
II Statistics of the world's production and consumption of cotton	225
III Statement showing the progress made by auction sales of American cotton in the Punjab	230
IV Details of a typical auction sale of American cotton in the Punjab held at Lyallpur, January 13th, 1918	231
V Report on the auction sale of American cotton held by the Okara Zamindars' Co-operative Society, on January 22nd, 1918	234
VI Berar Cotton and Grain Markets Law and Rules thereunder	236
VII List of recommendations	251

MAPS AND PLANS.

1 Cotton map of India I	} In separate volume..
2 Cotton map of India II	
3 Irrigation map of the Punjab	
4 Irrigation map of the United Provinces	
5 Irrigation map of Sind	
6 Plans of model ginning factory	