

INDIAN COTTON COMMITTEE

MINUTES OF EVIDENCE

TAKEN BEFORE THE

INDIAN COTTON COMMITTEE

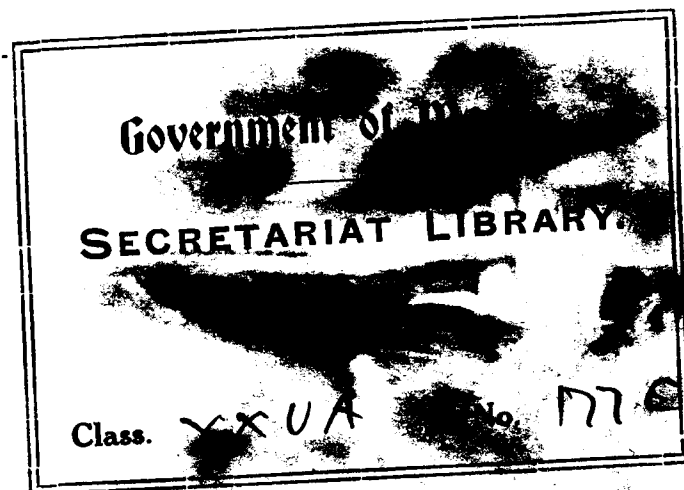
VOLUME V
COMMERCIAL

PART II

MINUTES OF EVIDENCE FROM MADRAS, BENGAL, IMPERIAL OFFICERS,
CENTRAL INDIA, BARODA AND HYDERABAD.



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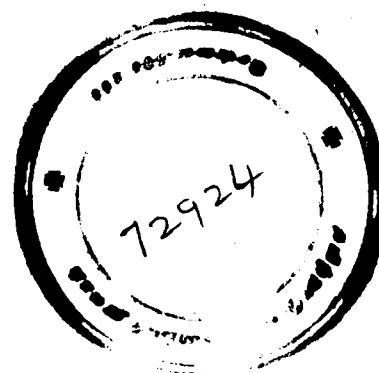
NOTE.

It is regretted that it has been impossible to publish the evidence given before the Indian Cotton Committee earlier owing to the transfer of the Secretary to other duties in August, 1918. For convenience of reference, the evidence has been classified under the three heads, Agricultural, Irrigation and Commercial. Volumes I and II contain the Agricultural Evidence, Volume III the Irrigation Evidence and Volumes IV and V the Commercial Evidence. The evidence of a witness will, therefore, be found in one or other of these volumes according to its predominating character. The references in black type in the written statements are to the questions issued by the Committee which are printed at the commencement of each volume. Thus "(30) Local trade customs" shows that the paragraph is a reply to question 30. A glossary of the more common vernacular terms used in the evidence is appended.

F. NOYCE,
Secretary,
Indian Cotton Committee.

BOMBAY;
October 1st, 1919.

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Glossary of the more common vernacular terms used in the evidence.

Amin	.	.	.	.	.	.	Subordinate official of the Irrigation Department.
Arat	.	.	.	.	.	.	Commission.
Aratya	.	.	.	.	.	.	Commission agent.
Arhar	.	.	.	.	.	.	Pigeon pea (<i>Cajanus indicus</i>).
Bajra	.	.	.	.	.	.	Bulrush millet (<i>Pennisetum typhoideum</i>).
Bania	.	.	.	.	.	.	Village shop-keeper and money-lender.
Barani	.	.	.	.	.	.	Land dependent on rainfall.
Bhata	.	.	.	.	.	.	Lateritic soil in the Central Provinces.
Bhindi	.	.	.	.	.	.	Lady's finger (<i>Hibiscus esculentus</i>), a vegetable.
Bhusa	.	.	.	.	.	.	Crushed straw.
Bigha	.	.	.	.	.	.	A land measure, usually about three-eighths of an acre.
Bora	.	.	.	.	.	.	Bag of unpressed cotton of varying weight, generally five maunds.
Chari	.	.	.	.	.	.	Great millet (<i>Sorghum vulgare</i>) grown as a fodder crop.
Chaudhri	.	.	.	.	.	.	A headman.
Dalal	.	.	.	.	.	.	Broker.
Deshi	.	.	.	.	.	.	Indigenous.
Dokra	.	.	.	.	.	.	Bag of unpressed cotton of varying weight, generally five maunds.
Ghats	.	.	.	.	.	.	Hills.
Gwar, gwara	.	.	.	.	.	.	Field vetch (<i>Cyamopsis psoraioides</i>), a fodder crop.
Hari	.	.	.	.	.	.	Cultivating tenant in Sind.
Inam	.	.	.	.	.	.	Land held on favourable terms or free of land revenue.
Juar	.	.	.	.	.	.	Great millet (<i>Sorghum vulgare</i>).
Kamdar	.	.	.	.	.	.	Fieldman : subordinate in the Agricultural Department.
Kan	.	.	.	.	.	.	Weight of lint obtained from unit weight of unginned cotton.
Kanungo	.	.	.	.	.	.	Subordinate revenue official in charge of a group of villages known as Revenue Inspector in Madras and Circle Inspector in Bombay.
Kapas	.	.	.	.	.	.	Unginned cotton.
Karbi	.	.	.	.	.	.	Dry <i>juar</i> fodder.
Karnam	.	.	.	.	.	.	Village accountant.
Kharif	.	.	.	.	.	.	The autumn harvest.
Khurpa	.	.	.	.	.	.	Hand hoe similar in shape to a trowel.
Killa	.	.	.	.	.	.	Square of land usually equal to 1½ acre in area.
Kodo, kodon	.	.	.	.	.	.	A millet (<i>Paspalum scrobiculatum</i>).
Kumbu	.	.	.	.	.	.	Bulrush millet (<i>Pennisetum typhoideum</i>).
Kunbi	.	.	.	.	.	.	A cultivator.
Kutki	.	.	.	.	.	.	A pulse (<i>Dolichos biflorus</i>).
Lakh	.	.	.	.	.	.	One hundred thousand.
Mahajan	.	.	.	.	.	.	Money-lender.
Makki	.	.	.	.	.	.	Maize (<i>Zea mays</i>).
Malguzar	.	.	.	.	.	.	Landholder in the Central Provinces.
Mandi	.	.	.	.	.	.	Market.
Methi	.	.	.	.	.	.	Fenugreek (<i>Trigonella foenum-græcum</i>).
Moth	.	.	.	.	.	.	A pulse (<i>Phaseolus aconitifolius</i>).
MukhtiarKar	.	.	.	.	.	.	Revenue officer in charge of a <i>taluka</i> (q.v.) in Sind.
Mung	.	.	.	.	.	.	A pulse (<i>Phaseolus mungo</i>).
Patel	.	.	.	.	.	.	Village headman.
Patwari	.	.	.	.	.	.	Village accountant.
Phutties	.	.	.	.	.	.	Unginned cotton : Kapas.
Rabi	.	.	.	.	.	.	The spring harvest.
Rui	.	.	.	.	.	.	Lint.
Sahukar	.	.	.	.	.	.	Money-lender.
Sailab, Sailabi	.	.	.	.	.	.	Land irrigated by floods or percolation from a river.
San	.	.	.	.	.	.	Hemp (<i>Crotalaria juncea</i>).
Sanji	.	.	.	.	.	.	A fodder crop (<i>Melilotus parviflora</i>).
Shaftal	.	.	.	.	.	.	A fodder crop (<i>Trifolium resupinatum</i>).
Tahsil	.	.	.	.	.	.	Revenue sub-division of a district

Tahsildar	Officer in charge of a <i>tahsil</i> , <i>taluk</i> or <i>taluka</i> (q.v.).
Taluk, taluka	Revenue sub-division of a district.
Til	Sesamum (<i>Sesamum indicum</i>).
Toria	An oil seed (<i>Brassica campestris</i>).
Tur	Pigeon pea (<i>Cajanus indicus</i>).
Urad	A pulse (<i>Phaseolus mungo</i>).
Varagu	Bulrush millet (<i>Pennisetum typhoideum</i>).
Zaildar	A rural notable appointed by Government. The head of a Zail or Circle of villages.
Zamindar	A landowner; in the provinces visited by the Cotton Committee generally a peasant proprietor.

VOLUME V.

Commercial.

PART II.

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VOLUME V—Commercial.

PART II.

Questions issued by the Committee.

I.—AGRICULTURAL EXPERIENCE.

(a) “*Deshi*” short-staple cotton.

1. In what cotton growing districts have you been stationed and for what period in each? Have you been in actual touch with cotton cultivators?
2. What varieties of *deshi* short staple cotton are grown in the districts with which you are acquainted?
3. What is the average size of holdings in which cotton is grown and what proportion of the holding is under cotton?
4. What are the average yields and profits per acre?
5. What rotations are followed and what manures, if any, are applied?
6. How does the return to the cultivator of the different varieties of *deshi* short staple cotton compare with the return from (a) *deshi* long staple cotton, (b) other *deshi* crops, (c) exotic cottons?
7. Does the area under *deshi* short staple cotton fluctuate at all largely in the districts with which you are acquainted, and if so, is there any special reason for this? Is there any possibility of an increase under *deshi* short staple cotton and, if so, what are the factors which would limit that increase?
8. To what uses is the seed put? Is any seed selection practised and, if so, on what principles? Is seed selected for sowing specially hand ginned?
9. Please add any remarks you consider may be helpful to the Committee on the general economic state of the cotton growing districts with which you are acquainted.

N.B.—Please see note at end of Section (c) below.

(b) “*Deshi*” long staple cotton.

10. In what cotton growing districts have you been stationed and for what period in each? Have you been in actual touch with cotton cultivators?
11. What varieties of *deshi* long staple cotton are grown in the districts with which you are acquainted?
12. What is the average size of holdings in which cotton is grown and what proportion of the holding is under cotton?
13. What are the average yields and profits per acre of different varieties of *deshi* short staple cotton, of which you have had experience? How do these compare with those (a) *deshi* short staple cotton, (b) other *deshi* crops, (c) exotic cottons?
14. What rotations are followed and what manures, if any, are applied?
15. What in your opinion, are the special conditions which would affect any increase in the area under *deshi* long staple cotton in the districts with which you are acquainted, e.g., length of ginning season, irrigation available, climatic considerations, competition with food crops, limitation owing to necessity of observing rotations, labour supply, etc.?
16. Do you consider that, in the cotton growing tracts with which you are acquainted, the right varieties of *deshi* long staple cotton are being pushed in the right districts or whether still superior types could be introduced?
17. What measures would you recommend to prevent the mixing of *deshi* long staple cotton with (i) *deshi* short staple cotton, (ii) exotic cotton (a) in the field, (b) in the factory?
18. To what uses is the seed put? Is any seed selection practised and, if so, on what principles? Is seed selected for sowing specially hand ginned?
19. Please add any remarks you consider may be helpful to the Committee on the economic state of the cotton growing districts with which you are acquainted.

N.B.—Please see note at end of Section (c) below.

(c) *Exotic* cotton.

20. In what cotton growing districts have you been stationed and for what period in each? Have you been in actual touch with cotton cultivators?

21. What varieties of exotic cotton are grown in the districts with which you are acquainted ?
22. What is the average size of holdings in which cotton is grown and what proportion of the holding is under cotton ?
23. What are the average yields and profits per acre of the different varieties of exotic cotton of which you have experience ? How do these compare with those of (a) *deshi* short staple cotton, and (b) *deshi* long staple cotton, (c) other *deshi* crops ?
24. What rotations are followed and what manures, if any, are applied ?
25. What, in your opinion, are the special conditions which would affect any increase in the area under exotic cotton in the districts with which you are acquainted, e.g., length of ginning season, irrigation available, climatic considerations, competition with food crops, limitation owing to necessity of observing rotations, labour supply, etc. ?
26. Do you consider that, in the cotton growing tracts with which you are acquainted, the right varieties of exotic cotton are being pushed in the right districts or whether still superior types could be introduced ?
27. What measures would you recommend to prevent the mixing of exotic cotton with (i) *deshi* short staple cotton, (ii) *deshi* long staple cotton (a) in the field, (b) in the factory ?
28. What is your opinion as to the desirability of importing seed direct from America or Egypt as required as against relying on selected seed grown in India ?
29. Please add any remarks you consider may be helpful to the Committee on the economic state of the cotton growing districts with which you are acquainted ?

N.B.—The Committee would be obliged if you would give them your views as to the best organization for handling cotton in your province. Under this head you might consider research in connexion with improvement of the plant, establishment of seed farm for the production of improved seeds, district staff necessary and the regulation of buying agencies and ginning factories.

II.—COMMERCIAL ASPECT.

30. Give, as fully as possible, an account of local trade customs with which you are acquainted in regard to the marketing of the cotton crop, in particular as regards any systems of agency, advances, future buying or contracts.
31. What are the commercial names of the various grades of cotton with which you are acquainted and from what areas do they come ? Do you regard them as suitable and, if not, what alterations would you suggest ? Can you suggest any means by which the commercial names could be standardized, i.e., of securing that the same name should be used for the same cotton from whatever locality it comes ?
32. What do you consider is the best form of buying agency ?

III.—STATISTICAL.

33. Do you consider that the cotton forecast, as at present published, is sufficiently accurate as far as your province is concerned ? If not, can you suggest any way in which it could be improved ?
34. Can you suggest any methods by which the statistical information published by the Government in regard to cotton other than the forecasts, e.g., the cotton press return, could be made of greater use to the cotton trade ?
35. What are your views in regard to the daily publication of Liverpool and Bombay cotton prices at up-country markets ?

IV.—MANUFACTURE.

(a) Ginning and Pressing.

36. What class of gins and presses do you use and how many have you in your factory ?
37. What is the size of the bale produced by your factory ?
38. What is your opinion as to the relative merits of saw and roller gins ?
39. Have saw gins been successful with Indian cotton and, if not, what is the objection to them ?
40. Have you experienced any difficulty in obtaining factory labour ?
41. Do you find the condition in which raw cotton reaches your factory in any way objectionable and, if so, what remedies would you suggest ?
42. Assuming that it were found possible to replace any large quantity of short staple cotton by long staple cotton, would any substantial alteration in your machinery be necessary ?

N.B.—The Committee would be obliged by any information you can give them in regard to the general question of long versus short staple cotton and also in regard to any experience you have had in handling any new staple cotton.

(b) Spinning and Weaving.

43. What counts are spun in your factory and what is your principal market ?
44. Do you find the condition in which cotton reaches your factory in any way objectionable and, if so, what remedies you suggest ?
45. What, in your opinion, would be the effect on the cotton market generally if any large proportion of the short staple cotton at present grown in India were replaced by long staple cotton ?

N.B.—The Committee would be obliged by any information you can give them in regard to the general question of long versus short staple cotton and also in regard to any experience you have had in handling new staple cotton.

V.—GENERAL.

46. Does your experience indicate that buyers in the past have been prepared to encourage the growth of improved cottons by offering a premium for them ?
47. Do you consider that the water rates charged have any effect on the cultivator's preference for a particular crop ?
48. Do you consider that any changes are called for in the schedule of water rates at present in force ?
49. Do you consider that the tenure on which land is held in the tracts of which you have experience in any way affects the extension of cultivation of cotton ?

VI.—IRRIGATION.

(For Punjab and North-West Frontier Province witnesses only.)

50. Please state what experience you have had of irrigation in general and in particular of irrigation under canals. Have you any experience of canal irrigation assessment work ?
51. Has it been your experience that cultivators prefer wheat to cotton as an irrigated crop ? If so what is the reason for the preference ?
52. (a) What is the critical period in regard to the water-supply in the canals of which you have experience ? How would this be affected if there were an increase in the irrigated area under cotton between April and October ?
- (b) When is cotton watered and what is the volume of water required per acre at each watering ?
- (c) Please furnish statistics for the channels of which you have had experience showing—
- (i) the average flow of the channels month by month throughout the year.
- (ii) the average monthly area of each crop irrigated under the channels. It will be sufficient if the average for the last three years is given.
- The maximum carrying capacity of the channels should also be stated.
53. (a) Are there any periods during which the supply in the rivers would be sufficient for a large expansion of the area under cotton to utilize which the canals could properly be enlarged with due regard to financial considerations ? If so, please give figures for the canals of which you have experience ?
- (b) How would such an enlargement of the canals effect the area under wheat ?
54. (a) To what extent could the duty of water on the canals of which you have experience be improved by equalising the distribution of the supply between the upper and lower outlets on the distributaries ?

N.B.—In the Punjab this process is technically known as the "remodelling of outlets."

- (b) To what extent could modules be used to effect this purpose ?
- (c) If the distribution were equalized, what additional irrigated area would accrue ? What crops would be grown on this additional area ?
55. Does the supply in the rivers increase gradually in spring and decrease gradually in autumn or are both the increase and decrease sudden ? In either case what is the effect on the cultivator's preference for a particular crop ? Please furnish, if possible, a diagram with statistics illustrating your reply for the canals of which you have experience.
56. (a) In cases in which canals carry a supply for irrigation during the summer months only, would it be possible for the sowings and final waterings of cotton to be carried out by irrigation from wells ? Do you know any tracts in which such a combination of irrigation from wells and canals would be feasible in the case of American cotton ?
- N.B.*—American cotton requires watering as follows:—
- (i) First watering between March 25th and May 5th.
- (ii) Three waterings between the time when the flowers begin to appear which is between July 20th and August 10th and the end of September.
- (iii) A fifth and final watering in October.
- (b) To what extent do wells exist in the areas commanded by the canals of which you have experience and what steps are required to extend the irrigation under them in these areas ?
- (c) Have you any experience of tube-wells and do you consider that their use would be valuable in this connexion ?
- (d) Do you consider that it would be possible sufficiently to improve the canal system by the construction of weirs or in other ways so as to obviate the use of wells ?
- (e) Can you give an idea of the cost of such an improvement in the canals and the time it would take to carry out as compared with the cost of the construction of the requisite number of wells and time it would take ?

57. In case it were found possible to increase the size of canals and consequently the irrigated area under cotton, what addition to gross revenue at present rates for water would you expect ? Please illustrate your reply from the statistics furnished in answer to other questions.

58. Can you give a rough estimate of the average area of each crop grown on a holding of 100 acres ? How are these areas affected by the water supply and by the necessity for growing a fodder crop and of preserving suitable rotations of crop ? Would any proposal you have put forward bring about an alteration in these areas ?

59. Have you any experience in regard to the lining of canals ? Do you consider it a practicable measure ?

60. Can you give a rough estimate of the probable cost of lining canals in terms of acreage irrigated ? How does this compare with the acreage rates of costs of the canals in their present condition ?

61. If it should prove desirable to enlarge a canal, would this be carried out in conjunction with lining ? How would you propose to provide for the existing irrigation whilst the work of enlargement and lining was being carried out ?

62. What effect would the lining of canals have on seepage problems and the rise in the subsoil water table ? To what extent would the expenditure involved be justified on these grounds ?

63. To what extent would the lining of canals improve the supply (a) in the summer months, (b) in the winter months ? Would the expenditure involved be justified by the improvement, if any, effected under this head ?

64. Do you consider that the water rates charged have any effect on the cultivator's preference for a particular crop ? Do you consider that any charges are called for in the schedule of water rates ?

VI.—IRRIGATION.

(For witness from Provinces other than the Punjab and North-West Frontier Province.)

65. Please state what experience you have had of irrigation in general and particular of irrigation under canals. Have you any experience of canal irrigation assessment work ?
66. When is cotton watered and what is the volume of water required per acre at each watering ?

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67. Has it been your experience that cultivators prefer wheat to cotton as an irrigated crop? If so, what is the reason for the preference?

68. Does the supply in the rivers increase gradually in spring and decrease gradually in autumn or are both the increase and the decrease sudden? In either case what is the effect on the cultivator's preference for a particular crop? Please furnish, if possible, a diagram with statistics illustrating your reply from the canal of which you have experience?

69. (a) To what extent do wells exist in the areas commanded by the canals of which you have experience and what steps are required to extend the irrigation under them in those areas?

(b) Have you any experience of tube wells and do you consider that their use would be valuable in this connexion?

71. Do you consider the existing water rates charged for cotton suitable? If you can give statistics to explain your answer, please do so.

71. Can you give a rough estimate of the average area of each crop grown on a holding of 100 acres? How are these areas affected by the water supply, the necessity for growing a fodder crop and of preserving suitable rotations of crops. Would any proposals you have put forward bring about an alteration in these areas?

72. Do you consider that sufficient water is available for a considerable increase in the area of cotton and, if so, why is a larger area not irrigated?

73. Is it your experience that cultivators prefer *deshi* cotton to American cotton? If so, can you explain their reasons for the preference?

74. Is it your experience that the canal regulations create any difficulties in regard to the irrigation of American cotton?

VII.—Madras.

Mr. M. WYNNE, Agent, Messrs. Binny & Co., Nandyal.

EXAMINED AT NANDYAL, FEBRUARY 27TH, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(b) "*Deshi*" long staple cotton.

5274. (10) **Experience.**—I have been stationed in Devangeri in the Mysore State for ten years also in Tadpatri in the Anantapur district four years and four months and in Nandyal in the Kurnool district three years and six months. I have not been in actual touch with cotton cultivators.

5275. (11) **Varieties.**—No varieties of *deshi* short staple cotton are grown here (Nandyal). All *deshi* cotton grown in this district is more or less long staple. The following are the varieties:—

- (a) White Northerns.
- (b) Red Northerns.
- (c) Masra.
- (d) Sircar (Government) cotton.

(2) (a) *White Northerns* are grown in Allagadda, Koilkuntla, Nallagadda and Sirvel, also in Nandyal and Nandikotkur. This cotton is creamy to white in colour with a fairly long staple.

(3) (b) *Masra* is grown in Nirvada, Nandavaram, Chenampalli and Banganapalli. This cotton is of a creamy colour and has a longer staple than that of *White Northerns*.

(4) (c) *Red Northerns* are grown in Gopavaram, Rudravaram up to Chagalmari and west of the Nallamalais. This has a longer staple than *White Northerns*. The colour of this cotton is creamy to red. Red cotton is also brought in from Tarlapadu and Markapur and is of a good red colour but poorer in staple than the one mentioned above. It is by allowing this cotton in this market that the mixing of short staple cotton of the Guntur market takes place. The mixing is done by ginning the two together in certain proportions. The Tarlapadu cotton being of a good red colour takes in the mixing and escapes being easily detected. The difference in prices between Guntur short staple cotton and Nandyal red cotton pays well, as the difference in price more than covers freight and other expenses. This cotton is, however, clean, free of leaves and dust. Tarlapadu and Markapur cotton do not come under *Red Northerns* though they are marketed at Nandyal as such.

4. (d) *Sircar (Government) cotton.*—This cotton has lately been introduced and is noted for its colour which is very white but the staple, I should say, is weaker and not as long as that of *White Northerns*. The average yield of this cotton is about the same as that of *White Northerns* but it gives five per cent. more lint.

5276. (12) **Size of holdings.**—The average size of holdings may be taken as 25 to 30 acres of which 35 to 40 per cent. is under cotton.

5277. (13) **Yields and profits and comparative returns.**—The yield of *deshi* cotton and exotic cotton may be compared as follows:—

	White Northerns.	Masra.	Red Northerns.	American.	Cambodia.
Maunds of 25 lbs.	8	8½	9	11	13 to 15

5278. (14) **Rotations and manures.**—Cotton and *jonna* (*juar*) are the main rotatory crops. As a general rule, the cotton crop is not directly manured but the previous crop is, with about five to seven cart loads of cattle manure per acre.

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[Continued.]

5279. (15) **Conditions affecting increase in area.**—Generally forty per cent. of the holding is put under cotton, forty per cent. under *jonna* and twenty per cent. under chillies, green gram, horse gram, Bengal gram or ground nuts. It is not possible to increase the cotton growing area by length of ginning season, etc. The high prices obtained during the past two years owing to war conditions resulted in an increase of area. I may say that, owing to the necessity of observing rotations, it may be difficult to affect any increase in the cotton growing area. I may further add that, in normal conditions the average gain, leaving out the past two years that are exceptional, does not encourage the ryot to increase his holdings under cotton. There is a fear of the holdings under cotton decreasing when the ground-nut fetches the normal price of Rs. 14 to one rupee a maund. The gain of different crops in normal conditions may be compared as follows:—

	Rs.
Cotton	10 per acre.
<i>Jonna</i>	10 „ „ with stalks.
Ground-nut	20 to 25 per acre.
Chillies	30 to 40 „ „

Of the above, though chillies pay the ryot best, he is unable to increase this area for want of manure and labour.

5280. (16) **Suitability of existing varieties.**—It does sometimes happen that the right varieties of *deshi* long staple cotton are not being sown in the right districts. Ryots sometimes grow *White Northerns* where they ought to grow *Red Northerns* and *vice versa*. The quality and quantity would be increased if selected seed were used for sowing and the plants opened out more.

5281. (17) **Prevention of mixing of different varieties.**—By the present trade custom, the selling of cotton passes through the village middleman, then the broker or the big merchant of the town and lastly to buying companies. It is this middleman who is responsible for mixing. He purchases from different ryots different qualities at different prices and mixes them together while ginning and brings the cotton into the market and gets a fairly good price for his trouble. This may be put a stop to in the course of a few years by establishing a cotton market, when the ryots will gradually come into direct contact with the buyers who will compete for the cotton in the market by which the ryot is likely to get a better price than he would from the middleman.

5282. (18) **Uses of seed and seed selection.**—Cotton seeds are used as cattle food only. Machine ginned seeds are generally used for sowing. Some do use hand ginned seeds but these are not specially selected.

(c) *Exotic cotton.*

5283. (21) **Varieties.**—There are two foreign crops grown on a small scale in this district, *viz.*, Cambodia and American Dharwar.

(2) *Cambodia* is white, has a silky feel and of a longer staple than *White Northerns*. The lint somewhat stained due probably to want of irrigation. Some growers of this quality irrigate it but on a small scale. Irrigation would, I think, increase the strength and length of the staple, also the yield and I do not think it would be so much stained.

(3) *American Dharwar.*—This is the worst type of cotton grown in this district. The staple is poor and the lint much stained. When the difficulty of selling this cotton by itself is felt by the middleman, he mixes it with white or *masra* cotton and tries to pass it off as *White Northerns*. This cotton is largely grown in the Banganapalle State on alkaline soils where the indigenous cotton does not thrive well. It would be well to discourage this quality. If all buyers would reject all such cotton, ryots would discontinue growing it.

(4) The lint obtained from Cambodia, *White Northerns* and *Red Northerns* from 63 maunds of 25 lb. compares as follows:—

	Cambodia Kapas. Maunds.	White Northerns. Maunds.	Red Northerns. Maunds.
Lint	22	17	15
Seeds	41	46	48
	63	63	63 maunds of kapas.

II.—COMMERCIAL ASPECT.

5284. (30) **Local trade customs.**—The price is fixed on 500 lb. per *khandi* pressed weight. Most of the business, say 75 per cent. is on the advance contract system. Ryots sell to the middlemen, sometimes to the brokers and the brokers to the different firms. Some middlemen sell to firms but generally through brokers. Advances are made on loose cotton when delivery is taken by the firm and a final settlement made after the cotton is pressed and weighed.

Mr. M. WYNNE called and examined.

5285. (President.) I have been three years and six months in Nandyal. I was in Devangeri for ten years. There are two varieties of cotton in Devangeri; one is known as the *juvari* or small *kapas* and the other is called large *kapas*. The small *kapas* is fairly strong and the lint has a reddish colour. It is a little darker than Nandyal cotton. The length of staple of *juvari* is about an inch. The other cotton is the American Dharwar, which is grown very largely there. It is fairly good; the staple is short but it is very white in colour. The Bombay people buy it very largely. They do not care about staple; they look more for colour. Madras looks to staple but Bombay looks to colour.

5286. The cotton on the whole here at Nandyal is very good especially the *White Northerns*. The staple is about one inch to 1½ of an inch. The first pickings are not up to the latter standard at all. The staple of *Red Northerns* is longer and stronger than that of *White Northerns*. *Masra* cotton is neither white nor red. It has a dirty white colour. There is a fairly large quantity of this. We only take it with an allowance. I have had experience of Government selection. We did not buy the Government cotton last year. We could

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not take it because it was very bad. All the cotton last year was bad on account of heavy rain. This year we have made no contracts with Government.

5287. The main objection to the cotton here, from the merchants' point of view, is that it is very dirty and adulterated; the cultivators do not take the trouble to keep it clean. There is good deal of sand, dirt and seeds in it. The different varieties are mixed. As the middlemen go round and buy *kapas* from the different ryots, they mix it altogether and get it ginned. We have not our own ginnery and we have just got to take what we can get. I think that if each firm had its own ginning factory or leased a factory, it could get better cotton because it could supervise the ginning. We could not get one ginning factory big enough for all the cotton we want, and we should have to lease others.

5288. I think it would be a good thing if a cotton market could be established here. The matter is under correspondence but the market has not been started yet. I think the big Indian merchants are against it. They fear that the cotton will be brought to the market and sold as spot cotton direct to the different firms.

5289. (Mr. Roberts.) They are putting up openers in the ginning factories here this year; if there are openers, one gets cleaner cotton. The provision of openers would be beneficial to the factory owners themselves because they would turn out more. The ginner is nearer to the cultivator than the merchant. At present, the cotton is cleaned, after it is ginned, on carts before we press it.

5290. About one-fourth of the cotton in this tract is Red Northern and three-fourths are White. That is roughly the proportion all over the district, that is round about Nandyal side. The crop of Red Northern is about 5,000 bales and of White Northern 25,000 bales including *masra*. We get different qualities of white, red and *masra*. As a rule the white cotton fetches a rather better price than the red although it is not so good in staple. I supposed this is on account of colour and of its being cleaner. We are buying some Red Northern this year as an experiment at the same price as White. If the cotton is brought in clean, we are giving the same rate for it as for clean white cotton. They used to mix red and white a good deal, and pass it off as white. Now that we are paying the same price, there is no advantage in mixing them.

5291. When I was here some ten years ago the Agricultural Farm was started. The first crop of cotton White Northern, put out by the Department of Agriculture was very good. We pressed the first crop but that was only a bale of it. That was in 1907. I came back again to Nandyal only last year. Previous to that I was here for about 2½ years. The Agricultural Department's cotton that was brought to me last year was very bad owing to excessive rains, the staple was very weak and I had to reject it. The tests were very bad; other cottons were also not up to the standard.

5292. I should like to have central places where cotton could be brought in for sale. Big firms would go there and bid for the cotton. They have such a market in Devangeri in Mysore. The cultivator would then get the advantage of competition.

5293. There is a meeting place at Adoni which is a sort of market. Volkarts and Rallis buy there and run up the prices very much. We make contracts with the big brokers or big dealers. We have no special broker of our own. We make our contracts as a rule about three months before the crop comes in. The price is fixed when the contract is made. This year's crop has already been sold to a very large extent. I think that fifteen to twenty thousand bales were sold before the end of December. The delivery time is in April, May and June. We have had no reason to complain of non-delivery so far. If the prices go up, there may be a tendency to deliver bad cotton and cotton below grade. The dealers who make the contract with us have already bought in advance from the middlemen; the middlemen have bought already from the ryots and it is the dealers who have contracted with us, will get into trouble in regard to delivery. They may import inferior *kapas* from some other place which they gin and try to pass off as White or Red Northern as the case may be.

5294. (Mr. Hodgkinson.) We buy cotton loose and press it ourselves. We do not find any damp in the cotton. It is only in the rainy season that the cotton gets damp. Some cotton is very badly mixed with *kapas* or seed but that is very seldom the case. The blow room loss is very high, at times about 18, 20 and 25 per cent.

5295. Cambodia cotton is longer in staple than White Northern. It is about an inch and a half. There is a little Cambodia grown near Kurnool. I do not think it would grow in this tract even with irrigation. The climate is too dry.

5296. We make contracts for good clean cotton and we give the best rate for it, the rate that they ask. If they give us clean cotton, the blow room loss would be below sixteen per cent. If the cotton is dirty, we make an allowance. We contract for clean cotton and expect the same, if this cotton is not clean it is allowed. Anything of which the blow room loss is up to sixteen per cent. is clean cotton. We have been paying a premium of Rs. 3 per *khandi* of 500 pounds of lint for Government cotton because it was cleaner cotton. Last year, we could not take it as, on account of the heavy rains, the cotton was bad. The price per *khandi* was probably Rs. 200. My firm would pay more if the ryots would give cleaner and better cotton.

Mr. B. ZEINDLER, Agent, Messrs. Volkart Bros., Guntakal and Nandyal.

EXAMINED AT NANDYAL, FEBRUARY 27TH, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

5297. (1 and 10) Experience.—I have been stationed for about five years in the Ceded Districts and have occasionally come in actual touch with cotton cultivators, either on my district duty, or attending the sale of cotton in the various markets.

5298. (2 and 11) Varieties.—The cottons grown in the Ceded Districts are usually classified as "Westerns" and "Northerns," the latter styles being less white in appearance than the former. *Westerns* cotton is produced chiefly in the Bellary district (75 per cent.) and in a portion of the Anantapur district (20 per cent.) and a certain quantity is imported from areas of the Nizam's Dominions bordering on the Bellary district. *Northern cotton*.—This is grown in the districts of Kurnool (60 per cent.), Cuddapah (20 per cent.) and in a corner of the Anantapur district.

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Mr. B. ZEINDLER.

[Continued.]

(a) *Deshi short staple cotton.*

5299. Varieties.—There are three varieties of short staple cotton, viz.—

Mangari-Westerns,
American-Northerns and
Sircars-Northerns.

This denomination 'American-Northerns' would indicate an exotic growth. However as this crop is not produced from seed imported direct from America but from acclimatised American cotton seed of other parts of India, I am dealing with this crop along with the two other *deshi* crops.

5300. *Mangari-Westerns*.—This is the early crop in the Western cotton area. It is raised almost exclusively on red and loamy soils of the Bellary district. These soils, especially pure red soil, have proved unsatisfactory for the cultivation of ordinary late or *hingari* cotton, hence our ryots gladly replaced the latter by *mungari* cotton after trials with this variety some ten years ago met with full success as far as quantity is concerned. The seeds of our present *mungari* crop have been imported from Hubli and the major portion from Akola. Our farmers assert that Akola-*mungari* plants produce as a rule a less stony quality than Hubli-*mungari* and some care is taken to avoid the remaining 'Hubli-seed' whilst sowing.

(2) The quality of *mungari* cotton is rather inferior, full of stains, and irregular, short, in staple. *Mungari cotton* fetches about Rs. 20 less per Bombay *khandi* than ordinary *hingari* cotton; *mungari kapas*, however, is paid better than ordinary *kapas* owing to the higher percentage of lint in *mungari*. The farmers, therefore, prefer selling *mungari* in *kapas* shape. Sometimes they retain their *mungari kapas* in their villages till *hingari kapas* has been picked and then slightly admix *hingari kapas* with *mungari kapas* and try to obtain for the mixture the full rate ruling for pure *mungari kapas*.

(3) *Mungari kapas* arrivals start in the months of December and January whilst *hingari kapas* comes in only in March and April. In January and February, *mungari kapas* is ginned fairly pure and the cotton is mostly taken up by mills. Later in the season, when three kinds of *kapas* are sold in the markets (pure *mungari*, mixed *mungari-hingari* and pure *hingari*) ginnings become rather mixed as it is practically impossible to separate the various qualities. Buyers of *kapas* are usually forced to take up a certain quantity of *mungari* or mixed *kapas* if they want to secure any larger quantity of *hingari kapas* as the bazaar brokers would refuse to sell *hingari kapas* separately till perhaps in the second part of the *kapas* season when *mungari kapas* arrivals rapidly decrease. So, for some time at least, the ginning factories turn out this mixture of short and long stapled cotton which is undesirable both for quality and purity of seed.

(4) I estimate the total production of *mungari* cotton at about 10,000 bales at 400 lb. for a normal season. The quantity of *mungari* mixed into *hingari* cotton may reach about seven per cent. of the *hingari* yield.

(5) The financial results for the farmers are given as under :—

	Outturn per acre lbs. kapas.	Lint percentage.	Profit per acre. Rs.
Hingari	240	26	35
Mungari	300	30-32	50

taking the cost per acre of both *mungari* and *hingari* cultivation at about Rs. 15, and calculating profits on basis of cotton prices ruling now.

5301. *American-Northerns*.—This crop takes the same position in the Northern cotton tracts as *mungari* cotton in the Westerns sector. It is an earlier crop than the indigenous *hingari* cotton, and equally yields a heavier outturn per acre with a higher lint percentage than ordinary long staple cotton. The percentage of lint is, however, not so high as for Westerns *mungari* and, in consequence, the profit per acre is about Rs. 5 less comparatively.

(2) *American-Northern* cotton has been raised from 'American' seed introduced from the Dharwar district (Gadag). In colour the cotton is white but invariably spoiled by stains. The staple is short.

(3) A large area of the Northern division is covered by this American cotton cultivation which is spreading fast in the Tadpatri range and in the adjoining villages of the Cuddapah district. The total production for the new season is estimated at about 14,000 bales of 400 lbs. each whereof by far the largest portion is marketed at Tadpatri. It is but seldom that American cotton is sold separately. Mostly it arrives mixed with indigenous long staple cotton.

5302. *Sircar-Northern*.—With a view, probably, to put a stop to, or discourage further increase of, the growth of American cotton in the Nandyal circle and to improve on the Northern styles in general, the Government Farm at Nandyal have made careful experiments with seed produced from special selected best indigenous White Northern. The seeds of subsequent crops by the farm are yearly sold to the cultivators. The cotton produced of such seed is called 'Sircar' cotton. This cotton is of a very satisfactory style, the colour being a splendid white, but unfortunately its staple is rather disappointing. In this respect, I believe first trials of Sircar cotton on the Farm's land have been more satisfactory and it may be that the reason for the present plants of Sircar cotton producing *short staple* has to be looked for in a probable deterioration of the seed in the different cotton tracts.

(2) Sircar and American cotton give about the same outturn per acre and there is also but a small difference in the percentage of lint.

(3) Sircar cotton not finding particular favour with cotton buyers arrives now very rarely separately in the pressing stations, generally it comes in mixed with ordinary white, long staple, Northern. No doubt it improves somewhat the general appearance of the mixture but from the point of staple the admixture of Sircar cotton is undesirable.

(4) Sowings of pure Sircar cotton-seed are not very large and the total output of pure Sircar cotton is estimated for the new season as within 1,000 bales at 400 lb. Mixed sowings of Sircar and ordinary White Northern are, however, increasing year by year. Owing to the shortage of cotton-seed supplies last autumn, about 3,000 bags of Hubli and Gadag cotton-seed have been imported and sown in the Nandyal cotton circle and I am rather afraid regarding its influence on the general quality of white Nandyals.

(b) "Deshi" long staple cotton.

5303. Varieties.—There are two distinct types of *deshi* long staple cotton—

(a) Ordinary Western *Hingari* and (b) ordinary Northern. There is yet another kind of long staple cotton grown in our districts, viz., Cambodia cotton, imported, as I am told, from the Tiruppur side.

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[Continued.]

5304. *Ordinary Western hingari cotton*.—This cotton is generally known here about as *javari* cotton. *Javari* cotton seeds contain two sorts, one whitish, the other blackish. The former originates from plants introduced about two decades ago from the Dharwar district whilst the black seeds represent the kind cultivated in the Westerns area from times immemorial. Both kinds of seed are always sown together.

(2) Westerns *javari* cotton produces a fair quality, whitish, and its staple which is fairly strong measures on an average about $\frac{3}{4}$ inch in length. A normal production is estimated at about 75,000 bales at 400 lbs.

5305. *Ordinary Northern cotton*.—The distinct feature of Northern cotton is its usual reddish or rather brownish tinge, varying from light pink to a clear shade of brown. Northern, therefore, are classified as White Northern, *masra* Northern, and Red Northern. In staple all Northern of our districts are slightly longer than Westerns and Red Northern which have the best staple of the Northern kinds produce on an average a staple measuring $\frac{7}{8}$ inch.

(2) Of White Northern, the best quality is grown in the Nyandyal valley. White Northern from the Kurnool side are less bulky.

(3) *Masra* Northern is the cotton produced from original mixed sowings of White and Red Northern cotton-seed.

(4) Red Northern are mostly produced on cotton fields in the neighbourhood of the hilly parts of the Kurnool district. A lot of short staple Red Cocanada is imported from the Guntur side and the Nellore district and is mixed up with Red Northern long staple. These imports are effected by rail, almost exclusively in form of *kapas*. I daresay this smuggling, if successful, is a very paying concern because Red Nandyals for instance fetch at times the same rate as White Northern whilst Cocanadas stand about Rs. 40 lower in rate per Bombay *khandi* and Nellore cottons still considerably lower.

(5) The quantities produced in normal seasons amount to about—

- (1) 44,000 bales White Northern,
- (2) 6,000 bales Red Northern; and
- (3) 2,000 bales *masra* Northern.

(6) In normal times, when red cotton is paid a little lower rate than white cotton, the profit per acre is about the same for White and Red Northern as for ordinary Westerns. Red cotton yields a little heavier crop than White Northern but, as said above, this is neutralised by the usual premium existing for white cotton.

5306. *Cambodia cotton*.—Trials with this variety are said to have been made first a good many years ago but they were never crowned with a full success. Now the seeds of Cambodia are fairly acclimatised but the plants are still subject very much to diseases, and occasional failures have discouraged a more rapid increase of Cambodia cultivation. I think that 2,000 bales in both Westerns and Northern cotton tracts must be considered a very fair production for the new season.

(2) The quality of Cambodia is rather frequently spoiled by prominent stains. During the process of acclimatisation, the staple seems to have suffered to a certain extent, however, even now, it is still longer than any of our indigenous cottons. In the last two seasons, when our districts had rainfalls above normal, Cambodia has been doing fairly well, the quality being almost free of stains. Cambodia as a garden crop is giving better results than if treated as pure dry crop. Experiments on the latter method of cultivation have, however, also proved quite satisfactory in well-manured red and loamy soil in the Adoni sector in the last season with its copious rainfall. Returns per acre are reported as under—

	Kapas production. lb.	Per cent. of lint. per cent.	Approximate profits. Rs.
Cambodia (Western area)	320	34	60
Do. (Northern „)	380—440	34	70
Hingari	240	26	35

I have pointed out that Cambodia is susceptible to diseases causing prominent stains in the quality but so are *mungari* and American cotton and, if either of the two latter kinds could be substituted by Cambodia, there would result at least a decided gain in staple cotton.

5307. *Improvement of Westerns and Northern cotton cultivation in regard to qualities*.—On the whole, I think—although I cannot speak with expert knowledge in this point—that improvements should be attempted with indigenous cotton in the first instance. With better seed selection and more scientific cultivation, the yield of the *hingari* plant could probably be improved. This, of course, does not mean that experiments with acclimatised exotic varieties or new exotic kinds should be entirely abandoned. If something for instance could be done to convert soils at present occupied by Western *mungari* or Northern American into soils suitable for garden crops or improved dry crops, I am inclined to think that the production of Cambodia cotton in our districts would vastly increase.

5308. (18) *Uses of seed and seed selection*.—Seed from handginned *kapas* are much preferred for sowing but this kind of seed is getting scarcer year by year with the steady increase of ginning factories, hence the majority of cultivators have to use the seeds turned out by these factories. This is unsatisfactory owing to the large mixing of several kinds of *kapas* whilst ginning and owing to careless ginning in general. A larger sale on easy terms of pure seed by Government farms and seed-branches in the principal markets would greatly promote the further improvement of standard qualities. It might also put a stop to occasional usurious habits of individual cotton-seedholders when disposing their seeds to needy cultivators.

5309. (46) *Attitude of buyers to improved cottons*.—It is perhaps true that the trade ordinarily do not encourage sufficiently pioneers of new styles of cotton. New types are not easily placed by the trade and in our districts the quantities available of new species of cotton are very small and holders besides are selling their parcels so sporadically that firms cannot make up any decent lots within a reasonable time and, in consequence, they cannot afford paying premiums on the few bags received from time to time. If owners of new kinds of cotton would combine and sell simultaneously not less than fifty bales total at a time, I am certain that competition would ensure proper premiums for the cultivators. This is amply certified by the gradually increasing premiums paid on Cambodia cotton in these districts.

5310. (17) *Prevention of mixing of different varieties*.—Mixing commences already in the fields; in some cases, the adulteration is done deliberately, in others, by indifference or because it is practically impossible to prevent mixed sowings. For instance, in certain regions of the Bellary district where the supplies

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[Continued.]

of cotton-seed have to be obtained from ginning factories, 'ordinary' or *javari* cotton seed is never quite pure but contains always a small percentage of the undesirable *mungari* seeds which 'accidentally' are sown along with the genuine *javari* seeds. No doubt, with proper care, the percentage of *mungari* seeds could be limited very much. In several tracts of the Northern area, white and red cotton seeds are sown indifferently in the same fields. Mixed sowings of *deshi* white and American cotton-seeds are in my opinion, rather due to intention than anything else as otherwise these sowings could not have assumed the large proportions as they muster now in some Northern markets.

(2) The ginning of the *kapas* affords ample scope for adulteration next. *Kapas* is ginned by hand, stones or gins. Hand and stone ginning occur mostly in villages whilst machine-ginning is chiefly done in the towns. With the steady increase of ginning factories in the districts in recent years, hand and stone ginning are resorted to less and less and the time is probably not far off when *kapas* will be exclusively machine-ginned. Hand and stone-ginning are done less carefully at present than in any previous seasons. Seeds are allowed freely to pass into the cotton and not only that: inferior, not fully developed *kapas* of the last pickings are ginned in the hand-*churkas* along with the good *kapas* or inferior small *kapas* is well beaten with sticks and mixed into the ready stone, or hand ginned cotton.

(3) In machine-ginning, mixing is practised very largely. Not only are inferior local kinds passed through the gins along with superior *kapas* but a not negligible quantity of inferior foreign *kapas* imported by rail is mixed up cunningly, and ginned with ordinary long staple *kapas*. Prohibition of rail borne traffic of *kapas* appears imperatively necessary. Still worse than the mixing of various sorts of sound *kapas* are the defects caused to cotton by careless ginning. A good many ginning factories, especially district-ginneries, have started to turn out very badly cleaned cotton, full of cut seeds, and grit, and through their careless ginning they equally spoil the staple of the cotton. Ginning factory owners usually explain that they cannot very well remedy matters for want of new stores, or funds to buy them. No doubt all gin stores have risen tremendously in rate and are hard to procure even at the high prices. For the new season, higher ginning charges are being contemplated which would enable gin-owners to purchase fresh stores but with all that I am still afraid that machine ginning will not improve very much. For this I am not blaming solely such gin-owners but more so the very keen competition which does not allow the buyer to penalise inferior cotton sufficiently to discourage bad ginning. Stricter selection has been tried off and on and results were an immediate increase of direct forwardings by important up-country dealers to ports where appointed commission agents sell their stuff on its own merits, chiefly to mills.

(4) I don't think that mixing of ready cottons of lower and higher grades is indulged in frequently by village dealers. If they want to adulterate their cotton they will have it done already along with *kapas*, in the ginning factory, or then they are admixing seed and dust in the ready cotton. New hands at mixing occasionally put lumps of *kapas* or even stones or other heavy things in the cotton but frauds of these kinds are usually detected during the pressing and the loss is mostly recouped by buyer from the guilty person.

(5) In the press factories, there is not much undue mixing except by individual dealers who at times get thus rid of inferior qualities. The cotton baled thus does not find buyers up-country and is forwarded to and sold on its own merits in a big cotton market like Bombay, etc.

5311. *Cleaning of cotton*.—Cleaning of cotton generally leaves much to be desired and I think this is a point that deserves as much attention as the question of improvement in cultivation of staple cottons. The cleanliness of cotton could certainly be improved by imposing the duty on all gin owners to use *kapas* openers which would remove most of the impurities now adhering to our cottons. Such openers are attached to almost all the ginning factories and have been generally in use still some four years ago when competition became so intensive that some factories stopped using the *kapas* opener and other factories gradually had to follow suit.

II.—COMMERCIAL ASPECT.

5312. *Standardization of weights*.—Westerns are sold per *naga* of 312 lb. and Northern per Madras *khandi* of 500 lbs. except Kurnool where transactions are based on the *kunilam* weight, viz., 400 lb. Introduction of one uniform weight standard, preferably pounds system (for instance the Bombay *khandi* or a fraction of it as is now the case throughout Berars and Central Provinces), with iron weights instead of the now customary weight stones, would simply much, assure more correct weights, and give the ordinary seller of cotton at a glance an idea of cotton prices ruling in all the surrounding markets. This would probably benefit our cotton sellers up-country more than the publication of Bombay or Liverpool cotton quotations. I am not at all in favour of the posting of such quotations owing to the constant fluctuations which might be but misleading to most of the village sellers, and probably encourage speculation among town dealers more than is advisable. As it is, there is enough speculative business going on in our districts. Cotton has always been sold forward to a certain reasonable extent but there are now markets where dealers sell regularly up to eighty and more per cent. of the estimated new crop in advance and before the growing crop has passed the most critical stages. Forward contracts should be discouraged. This might be attained by imposing a heavy stamp duty on such contracts. (The necessity of having such contracts might at the same time be a good protection for the small ryot as in such stamped contracts all the selling and other conditions would have to be clearly stated.) The big dealer might not mind much such a stamp duty but the small dealer might fight shy of selling to the big dealer when having to bear the cost of a heavy stamp. Besides future selling of local cotton, more important merchants occasionally buy futures at Bombay, or contract cotton in other up-country markets, both with the intention of settling these contracts at some convenient time.

5313. *Necessity for open markets in the Northern tract*.—Northern, generally, are sold heavily in advance whilst by far the major portion of Westerns arrives in the ready markets. We find, therefore, established open markets in the principal cotton centres of the Westerns area in contrast to the Northern section where there are none and where the marketing of the cotton is usually in the hands of some big town brokers in the various pressing stations. Another reason accounting for the absence of open markets for Northern is that the principal selling system in vogue there is based on full pressed bales only, i.e., the firms take delivery of pressed cotton only, cleaned and pressed in their own presses. This system has probably the advantage that sellers of cotton will take more care to bring clean cotton for pressing whilst in the ready markets there is the great temptation for them to smuggle through less clean stuff. The disadvantage of the full pressed bales selling system is, however, that cotton sellers not

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Mr. B. ZEINDLER.

[Continued.]

living in the pressing station are dependent on the town brokers who will get the cotton pressed for them and advance them money till the full settlement is made by the firm after the delivery of the pressed bales. In the ready markets, any dealer (from villages or otherwise) may bring his cotton, sell it and receive its full value then and there. The position for the village dealer selling on the full pressed system is even more accentuated in the heart of the season when stocks for pressing accumulate heavily in the press factories. Then these dealers will have to await their pressing turns, sometimes for weeks, and hence as a rule the villagers prefer selling to brokers only instead of direct to firms, and in consequence they do not always get the full value of their cotton as for instance at an auction sale in an open market. Open markets, therefore, appear to me as being badly required in all the larger pressing stations for Northerns. I believe that the firms are not against such a scheme, and as a matter of fact, I know that for instance at Nandyal one of them would be agreeable to lease the municipality a suitable plot near the railway station on a nominal rent for an open mart. Marketing hours should be fixed for all open markets in such a way as to allow of selection and weighing of cotton purchased still on the same day.

III.—STATISTICAL.

5314. (33) **Improvement of cotton forecast.**—I have pleasure in stating that there has been a vast improvement of late in the usual sowing and outturn forecasts for Westerns and Northerns. These forecasts have to be made up rather early and whilst the dates for publication probably fit in very well for Northern India, forecasts in Madras have to be based chiefly on guess work with the result that the first reports occasionally are contradictory to prevailing local opinions. Estimates for these parts are usually a difficult task owing to imports from the Nizam's Dominions into our Western markets varying very largely in sympathy with the relative price parities in our markets and Raichur during the seasons.

IV.—MANUFACTURE.

5315. (42) **Effect on machinery of replacement of short staple cotton by long staple.**—Assuming that it were found possible to replace any large quantity of short staple cotton by long staple cotton, no substantial alteration in our machinery would be necessary. All that would have to be done is to adjust gin knives and rollers and probably to increase the size of the bale in the press as long staple cotton cannot stand too great a pressure without the staple suffering.

Mr. BERNARD ZEINDLER called and examined.

5316. (President.) I have been stationed for about five years altogether in Nandyal and at Guntur, Adoni and Guntakal. The principal cottons in this tract are Westerns and Northerns. In Adoni and Bellary, Akola cotton is getting mixed with the long staple cotton. It is not mixed with the local cotton here at Nandyal. We have a short staple cotton called Dharwar American in this tract. "Sircar" Northern is also a short staple cotton. In staple, it is fifteen to sixteen millimeters, or even a little less. It does not pass the test of Westerns in staple.

5317. My principal objection as regards the cotton that comes to the market is that there is much mixture of short and long staple cotton. In some places where we have ginneries we buy *kapas* but mostly we buy ready cotton. Westerns cotton is very badly ginned. The cultivators are very careless about picking it and it is a very dirty cotton. We have ginneries of our own in Guntakal and Adoni. Mixing is increasing very much. I dare say that it is the intensive competition during the last four years which has caused this. The Japanese have now come into the market and so there are more buyers and there is more leniency in selection. Mixing is done deliberately in the ginning factories, at least in certain parts. Of course there are a good many ginning factories, which gin cotton pure in order to keep up their reputation. Exporting firms for instance always gin cotton pure. We do very little ginning for outsiders. When we do so it is more or less for our own constituents who will sell the ready cotton to us. We gin chiefly in Guntakal and there is very little mixing done there as there is only one variety there. The *mungari* (i.e., Akola cotton) does not do well on black soils.

5318. (Mr. Roberts.) I am strongly of opinion that the system of forward contracts is a bad one. It has ruined very many dealers and it will be the cause of many failures this year. This year, the Northerns cotton has been sold forward to the extent of about sixty to eighty per cent. of the estimated crop. The crop was originally estimated as a bumper one, but it may turn out to be much less. There may be more rain and much *kapas* may be spoilt. We had very heavy rains at the end of February and the estimate for the whole crop was reduced from 1½ lakhs to one lakh of bales on account of this rain. The chief reason against buying forward is that the people may not be able to deliver. Forward contracts tend to deprive the cultivator of the real value of his cotton, especially in cases where the whole market is in the hands of a few big brokers. For instance, at Nandyal and at Tadpatri, there are only four to six brokers who sell the whole cotton crop. These people may force the cultivators to sell forward against their liking. There is another point which is that with forward selling, there is no inducement to the cultivator to bring a superior quality of cotton. They have no inducement except to bring cotton that will pass against the contracts which have been made. In an open market, they would try to bring better cotton and to get better rates. My suggestion is that a heavy stamp duty should be levied on forward contracts as an experimental measure. I think that the smaller dealers would probably not like to pay the stamp duty. A good many dealers have been selling cotton forward but they have never seen cotton and they merely speculate in it.

5319. I would advocate the standardization of weights as in Berar. I would take as a unit the Bombay *khandi* if possible. Then we can compare prices with the Bombay rates. In Adoni, Bellary and Guntakal, we have got the *nag* system and only six to eight stones are used for weighing. The *nag* is twelve *maunds*, of four *dadiams* of twelve *seers*. So there are six maund stones, four maund stones, three *maunds*, two *maunds*, one maund, two *dadiam* stones and six *seer* stones. If we had the Bombay *khandi*, a lot of stones could be done away with. Small dealers would understand the weighing better if there were fewer stones. The cultivators would be able to market their cotton easier if there were more uniformity. During the course of the season, the stones wear out to a certain extent. The weights are occasionally inspected by the Sub-Magistrate.

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Mr. ROBERT P. GILL.

[Continued.]

5320. As far as I can make out, Dharwar American at Tadpatri is always grown mixed with White Northerns; it does not come into the market by itself. I have never heard of it coming in separately. We can distinguish it very well by its white colour and by the stains and the short staple. As I said before, *mungari* is not grown in places where American cotton is grown. *Mungari* and American give the same results and so in the places where *mungari* is grown the people are not taking to American. There is, of course, a chance of *mungari* spreading in the Northerns tracts, for instance, Kurnool. American seed is imported from Dharwar every year to Tadpatri, Bellary and Nandyal. At Nandyal 3,500 bags of 156 to 160 lbs. each have been imported this season. That is enough seed for about 30,000 acres. The cultivator gets Re. 1 to Rs. 3 more per *nag* of 312 maunds of *mungari kapas* than he does for *hingari kapas*. *Hingari* lint is worth Rs. 20 more per Bombay *khandi* or Rs. 8 per *nag* than pure *mungari* but the price per *nag* of *kapas* is Rs. 3 less. The whole *mungari* crop is not more than seven or ten per cent. of the *hingari* crop. The higher price of the *mungari kapas* is largely due to the fact that there is such a small proportion of it and it gives a better outturn. The *kapas* of the mixture fetches a higher price on account of its higher lint percentage. Mixing is done already in *kapas*. Sometimes the various *kapas* cannot be kept separately by the ryots owing to mixed sowings. It is mixed in the houses of the ryots. *Mungari* cotton is the earlier crop. As I have said *mungari kapas* is worth Rs. 3 per *nag* more than *hingari*. The cultivator only mixes *kapas*. He gets less in the market for pure *hingari kapas*, so he takes a small proportion of *hingari kapas* and mixes it with a larger proportion of *mungari kapas* in order to get for the mixture the same rate as for pure *mungari*. In other words he uses the long staple to adulterate the short staple, if that can be called adulteration.

5321. I have some experience of the Sircar Northerns cotton which the Department has been putting out. I bought it at the Nandyal farm. In 1903, I bought the whole outturn of the farm, forty to fifty bales of Sircar cotton pure and was able to place it in Bombay. In Bombay, however, it was not very much favoured because the staple was a little irregular and also a little weak. The following year I bought another fifty bales and passed it on to a mill which was satisfied that it was a clean cotton but remarked that the staple was short. After that I could not find any buyers who would pay more for it than for ordinary Westerns. Ordinarily Northerns fetch higher rates than Westerns and when I say that they would not pay a higher rate for Sircar cotton than for Westerns it means that they were offering a lower rate than for Northerns growing in the same district. We were very satisfied with the cleanliness of the cotton. I think Sircar cotton would not have many chances in a place like Bombay where they get such large quantities of very clean cotton from the Berars. Northerns here are usually a little dirty. As firms would not buy Sircar cotton any longer, the people started to mix with it. I do not think that at present it is as good as Northerns.

5322. In Nandyal we have red cotton of beautiful staple. As a rule, this red cotton fetches a very little lower rate than White Northerns. This season the rate is the same for both, and so people are bringing in short staple red *kapas* from Ongole, Nellore, Guntur and Markapur by rail getting it ginned here and passing it off as Red Northerns.

5323. (Mr. Hodgkinson.) Cotton comes in in a dirty condition chiefly on account of the bad ginning and afterwards because it is not sufficiently cleaned in the presses. Exporters do care about this because they have to take their cotton to Europe to compete with cotton there but the people who send their stuff to Bombay and sell it thereon its own merits do not care so much about cleanliness. We fix a rate for good *kapas* and make allowances for inferior cotton. We do pay premium for clean cotton. For cotton from districts from which we get decent cotton, we pay Re. 1 to Rs. 2 per *nag* more. There has been much deterioration in cotton during the last four or five years not so much on account of bad picking in the fields on account of the subsequent treatment of *kapas* or lint. I think that if there were an open market, at Nandyal as suggested or favoured by several Nandyal (European) Sub-Collectors, larger lots of good *kapas* or cotton would come in and the dealers would always get higher prices for it. Farm *kapas* carefully picked and ginned has a loss of only eight per cent. in the blow room. I think that the buyer up country would hardly be inclined to pay an adequately high price for cotton with lower blow room loss as he is not an expert as a rule. By up country buyers, I mean the mills. If cotton were sold direct to the mills they might pay the full price for clean cotton but, even then, I do not think that the extra price would compensate for the extra trouble and expense owing to mills having not much use or liking for small quantities of special varieties. I mentioned that stone weights were used in the Westerns area.

5324. Here in Nandyal in the Northerns tract, iron weights are also used. Stone weights get worn and chipped. Buyers quickly find out if bad weight is given. Iron weights are preferable to stone weights, and I would recommend the abolition of stone weights and the substitution of iron weights. I would recommend standard weights.

5325. It would be a great boon to the cotton trade if the roads in this tract could be improved. Especially during the monsoon, i.e., in May, June and July the people find it very difficult to bring their cotton to the market as the roads are so bad in this tract. A railway from Yerraguntla to Nandyal would improve matters.

Mr. ROBERT P. GILL, Guntur.

EXAMINED AT GUNTUR, FEBRUARY 28TH, 1918.

Written statement.

5326. **General description of Coconada cotton.**—I have had 43 years' experience in cotton business in Guntur, the particular grade of cotton being a short staple *deshi* known in the market as Red Coconadas. The distinctive characteristic of this cotton is its colour, which, though called red, is more correctly camel colour. It also meets with a special demand owing to its reputation as a cotton that takes dye advantageously. It derives its name of Coconadas from the fact that prior to railway communication being opened up, it was almost exclusively shipped at the port of Coconada though the principal area in which it is grown lies in the Kistna and Guntur districts.

(2) Before the introduction, about thirty years ago, of machine ginning there was but one grade on the market now we have the two grades known as Ordinary Fair Red Coconadas (hand ginned), and Machine Ginned Coconadas which stand in proportion at about one-fourth and three-fourths respectively. The total

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Mr. ROBERT P. GILL.

[Continued.]

of both grades brought to market has averaged for the past ten years 57,680 bales of 400 lbs. per annum. The following statement gives particulars of Coconada cotton pressed in Kistna and Guntur districts for the past ten years in bales of 400 lbs. each :—

Season from April to March.	KISTNA.	GUNTUR.		TOTAL.	Yearly average for ten years.
	Bezwada.	Guntur.	Narasaraopet.		
1907-08	...	64,232	...	64,232	57,680
1908-09	...	62,899	...	62,899	
1909-10	5,500	51,829	...	57,329	
1910-11	6,614	32,930	...	39,544	
1911-12	11,000	56,068	...	67,068	
1912-13	13,547	69,798	...	83,345	
1913-14	12,900	35,814	6,859	55,573	
1914-15	11,255	19,439	6,451	37,145	
1915-16	11,231	30,950	14,625	56,806	
1916-17	9,409	31,033	12,418	52,860	
	81,456	454,992	40,353	576,801	Average.
Average	10,182	45,499	10,089	57,680	

To deal with this annual crop of say, 55,000 bales there are eleven steam cotton presses, two being at Bezwada, seven being at Guntur, and two being at Narasaraopet whilst there are no less than 36 ginning factories running in all 356 double roller gins.

5327. *Area and yield.*—The area under Coconadas is 269,500 acres made up as follows :—

	Acrea
Godavari District	6,500
Kistna	55,000
Guntur	153,000
Nellore	55,000
	269,500

(2) The Madras Department of Agriculture take the yield at 75 lbs. of lint per acre as an average normal crop (against 66 lbs. for the average outturn per acre of the present crop for all India as published by the Department of Statistics). This on 269,500 acres gives a crop of 50,530 bales. Locally we take it at rather a more liberal figure.

(3) To arrive at the yield of lint per acre, we must first take the yield of lint produced from the *kapas*. In this district a *khandi* (500 lbs.) of *kapas* will yield about 134 lbs. of lint. As to the yield of *kapas*, some lands will give a full *khandi* per acre, others of course much less. The ryot looks upon 12½ maunds or 312 lbs. of *kapas* per acre as an average crop. If a *khandi* of 500 lbs., of *kapas* will give 134 lbs., 312 lbs., will give 84 lbs. Taking the acreage at 269,500 and the yield at 84 lbs., we have a crop of 56,595 bales (400 lbs. each) which is rather nearer the figure as shewn in our table of cotton actually pressed.

5328. *Deterioration in Coconadas and its causes.*—With regard to seed selection, before the introduction of machine ginning, the ryot hand-ginned his own *kapas* and used the seed got from it. We then had an excellent quality of pure good cotton, but as the number of ginning factories increased, the ryot had recourse to them for his seed and quality steadily went down. A few years ago, steps were taken to improve matters, by selecting special *kapas* and having it separately ginned and the seed distributed amongst ryots. It did good for a while, but the interest gradually faded and there was a return to the ginning factories. They are now the chief source of supply except in a few isolated places where the ryots continue a certain amount of planting from their own hand-ginned seed.

5329. *Evils of the forward selling system.*—The ginning factories exercise no special care in the way of producing any particular grade of outturn. They obtain *kapas* indiscriminately from anywhere and mix “all and sundry” and an uneven inferior seed is the result. But the present trade custom, in practice, of buying new crop months ahead, say in September and onward, for April delivery, almost before the seed is in the ground, is responsible, in some measure, for this state of things. This speculative selling is not done by the ginning factories themselves but by middle men (mostly called speculators) who ultimately have to go to the ginner to buy for their deliveries, and in most cases have to accept what they can get. This undoubtedly lowers the standard. The ideal market no doubt is where one can see on the spot what one is offered and take it or leave it, but in the present state of business that is not practicable. These districts are noted for their superior farming but, with regard to cotton, it seems to be a crop that is left a good deal to look after itself, for little manuring is done, and no watering. It relies on favourable rain, an absence of unfavourable wind, and freedom from attacks of insect and other pests. The profit must now be very considerable, for whereas Rs. 35 is taken as a paying unit, the farmer should now be getting a good deal more than double that figure.

5330. *Local trade customs.*—There are no special local features as to the marketing of the crop. The customs are much the same as are found in any market in the Presidency.

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Mr. A. A. STATHACOPOULO.

5331. *Type of press and size of bale.*—The makes of presses in use are principally the Nasmyth Wilson's and the Cummin's patent, the size of the bale being about seven cubic feet for export and about nine cubic feet for mill bales.

Mr. R. P. GILL called and examined.

5322. (*President.*) I have had ten years' experience in Mincing Lane, and 43 years' experience of the cotton trade in Guntur. There is only one kind of cotton here, machine ginned and hand ginned Red Coconadas. My experience of Coconada is that it has deteriorated very much indeed of late years. It is not a long staple cotton. The staple is from ½ inch to ¾ inch. It varies in different *taluks*. Cotton grown in the Palnad Taluk in the north-west of the Guntur District has a stronger staple than that of any of the other *taluks*. As long as the colour is intact and it is not mixed with white, the Palnad cotton is fairly good though it is very leafy. The characteristic of the Palnad Taluk is that it is leafy. It is not as well picked as it should be. There has been very great deterioration in cleanliness. I do not think there has been much deterioration in the staple. There is no trace of mixture of other cottons with Palnad cotton in the field. There is only one ginning factory in the Palnad Taluk and no cotton comes in there from other places. It is desirable that this cotton should be brought back to its old pitch of colour and cleanliness. It is difficult to explain the alteration in the colour. I can only say that years ago the colour was much darker and the cotton was not so dull and such dirty looking stuff as it is now. I put the deterioration down to two causes; one is bad ginning and the other is forward buying. There is a good deal of forward buying. Some sort of cotton has to be delivered against the contract.

5333. I think the restriction of the movement of cotton from one place to another except in the form of fully pressed bales would be useful. The ginning factories are out to make money. I am not very optimistic about the effect of licensing ginneries. I do not see how the under-paid inspector, whose employment such a system would involve, would be kept under control. I should be delighted if anything could be done but whether it is practicable or not I do not know. The ginneries in this tract are rather small; there are only ten to twelve gins in them as a rule. Hand ginning is on the decrease.

5334. (*Mr. Hodgkinson.*) Very little Coconada goes to Madras now. At present almost all of it goes to Bombay since steamers stopped calling at Coconada. I do not know what is being done with it at Bombay; it used to be exported largely from Cocoad to Havre and to London. Mincing Lane was the principal market for it. I used to work with Messrs. R. J. Rouse and Company in Mincing Lane. Coconada cotton is seldom seen in Liverpool now.

5335. As I have mentioned in my written evidence, some years ago, the distribution of selected seed was started but it did not last.

5336. The cotton is picked by hand by a few women at a time. I do not think that they pick the whole field straight away. I have not sufficient experience to say that it would be a good thing if the cotton were picked early in the morning.

5337. (*Mr. Roberts.*) This white cotton which is brought in comes from Tuni. It is also brought in from Adanki which is on the borders of Nellore but most of it comes from Tuni. The worst cotton that we get is from Adanki and the best cotton from Palnad. There is a larger acreage in the Palnad Taluk than in any other. According to the last figures Palnad had 63,746 acres, Sattanapalle 32,000 acres, Vinukonda 23,000 acres and Guntur only 17,000 acres to 18,000 acres.

5338. As regards the efforts made to improve the cotton by giving out selected seed, I think they were made by the Agricultural Department through the Collector about twelve years ago. The seed given out was merely selected factory seed. I do not know the difference in price between Coconadas and Northern. In this District, one can only buy Coconadas.

5339. The establishment of open markets would be the best system theoretically. A firm sends its agent an order for a thousand bales: the agent cannot buy a thousand bales at a time so he has to go to two or three people. If he has to carry out his firm's order, he has got to get somebody who will take the risk. He cannot buy from the cultivators so the middleman comes in. The cultivators in various *taluks* have their agents in Guntur and send them instructions to sell so much on their account but that is done generally later on in the year when the cotton begins to come in. The cultivators are beginning to sell through agents in Guntur but they only sell forward a month or so beforehand as they see their crop coming on. They have been holding out for the best profit. The cultivators do get advances. It would be a very good thing if there were a very heavy stamp duty on future contracts. I consider that future buying is objectionable.

5340. I had a cotton opener in my pressing factory but I have never seen them in use in a ginning factory. I have not seen any *kapas* openers.

5341. (*Mr. Hodgkinson.*) It is true that unless there is forward buying the millowners cannot cover themselves but that is another matter. What I maintain is that forward buying as practised here is a bad practice and that it is carried to excess. I do not think that the millowners want to buy in September or October for delivery in May or June next year.

Mr. A. A. STATHACOPOULO, Agent, Messrs. Ralli Bros., Guntur.

EXAMINED AT GUNTUR, FEBRUARY 28TH, 1918.

5342. *General description of “Northern” cotton.*—“Northern” is the denomination of cotton grown in Kurnool, Tadpatri, Prodattur, Nandyal, etc., with chief centre Nandyal and an average crop of 50,000 bales of 400 lb. net. There are twenty ginning factories in this district of a capacity of 366 rollers, three presses in Nandyal, two in Kurnool, two in Tadpatri and two in Prodattur.

(2) The following varieties of Northern are the most important :—

- | | |
|-------------------------|---|
| (1) Red | (a) Machine ginned and (b) hand ginned. |
| (2) Red white | (a) Machine ginned and (b) hand ginned. |
| (3) White | (a) Machine ginned and (b) hand ginned. |

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Mr. A. A. STATHACOPOULO.

[Continued.]

(3) Pure red is the best quality as regards staple only; it does not command more price than white or red white; as a matter of fact, it is sold always Rs. 5 to Rs. 7 less than white per Bombay *khandi* of 784 lb. Cultivators use seed either taken from the Nandyal Government Farm or from other local ginning factories and sometimes from Gadag (*kumpla* seed).

(4) Pure White Northernns now is not produced and the qualities which we have are the outcome of different seeds sown separately or indiscriminately mixed.

5343. *Cotton on the Government farm.*—Although the outturn of *kapas* per acre and of lint per 100 lb. is entirely dependent on the quality of seed, soil, manure, the time of sowing and the weather condition, the highest outturn of lint per 100 lb. of *kapas* is obtained from the Government seed farm; same in 33 per cent. which is by five to seven per cent. better than the indigenous white and is the same as the Americans. The Government seed farm is too small and this accounts for the better outturns; but its drawback is that the staple is too short (only one inch at best) even shorter than that of the indigenous quality although it is somewhat stronger. In conclusion, the efforts of the Government Agricultural Department have so far ended, as regards staple, in producing unsatisfactory variety instead of improving the already good stapled indigenous one which is $1\frac{1}{4}$ inch.

(2) Another reason on account of which probably the Government continued sowing this seed was a premium of Rs. 2 to Rs. 3 per *khandi* which Messrs. Binny & Company were paying and this evidently led the department to think that its cotton was better than the indigenous quality. Now that Messrs. Binny & Company discontinued paying this premium since last year and since no other firm encouraged this quality from the beginning, the Government farm is changing the quality of its planting.

5344. *Cambodia cotton in the Northern tract.*—The best outturn of *kapas* and lint is obtained from Cambodia sown in irrigated black, slightly black red or slightly white black or hard and light black or white black soil; then the plants flourish best, worms, and stains are prevented and 1,200 to 1,600 lb. of *kapas* per acre can be obtained with 37 per cent. outturn of lint.

(2) This variety has a creamy-white appearance and it has a very soft and silky staple which is $1\frac{1}{4}$ in. to $1\frac{1}{2}$ in. long; the benefit of irrigation to this long stapled variety is evident from the fact that on unirrigated soil, the outturn drops to nearly half of what is obtained from the irrigated soil, the outturn of lint is also slightly affected as the pod itself does not mature luxuriantly and lastly the staple is shorter by just $\frac{1}{4}$ inch.

5345. *Comparison between Cambodia cotton and Red Northernns.*—Red Northernns have a satisfactory staple but the outturn is very poor. The best outturn (300 to 400 lb. per acre and 24 per cent. of lint) is obtained from the east part of the Nandyal valley; its staple is $1\frac{1}{4}$ in. to $1\frac{1}{2}$ in. long whereas the staple of the stuff sown on the west is 1 in. to $1\frac{1}{4}$ in. with a lint outturn of 200 to 250 lb. only, viz., similar to *kumplas*. Red soil is best suited for the Red Northernns. My opinion is that Cambodia cotton may have promising development if irrigation is improved at least on the hard red tracts; at present, ryots, in spite of its large yield, are not taking it up as the stained Cambodias are penalized by buyers.

5346. *Prospects of improved variety No. 14.*—The Government farm authorities are now planting a better kind of cotton which owing to its good staple is sold at better prices; this quality is called No. 14; it was sown more largely this year out of selected seeds of the indigenous red (Red Raynard). The seed has been selected out of red cotton seed but the cotton produced is white. The staple of this cotton is not as long as that of the indigenous red quality. It is better than their No. 2 but I am afraid that if this selected seed is again sown in red soil the result will be red cotton.

5347. *Mixing of different varieties.*—Adulteration of White Northernns is taking place with White Americans (800—1,000 and 33 per cent.) which is the objectionable quality as it is like saw-ginned Dharwar cotton and has a poor staple ($\frac{1}{2}$ in. to $\frac{3}{4}$ in.). At present it is sown on a very small scale but owing to better outturn is bound gradually to extend to a larger area. American Northernns are mixed with ordinary White Northernns since it is difficult to sell them separately. Mixing is done after ginning, as the gin factories charge a much higher ginning rate for Americans owing to its being hard for ginning and consequently giving a poorer outturn of lint per gin per day.

(2) Red cotton is adulterated in the ginning factories with ordinary Coconada, which are imported into the Nandyal market to such an extent that it has become very difficult to the buyer to buy safely the unalloyed Red Northernns. Coconadas are imported in the shape both of *kapas* and ginned mostly from Tarlupadu, Markapur and Vinukonda, which are 62, 69 and 118 miles respectively, distant by rail; Coconadas are by Rs. 40 to Rs. 50 per *khandi* cheaper than Northernns. In spite of this defect, the local agents of a firm in Nandyal have circulated in November 1917 a notice to the Nandyal merchants that they will take delivery of pure Red Coconada paying the same rate of Northernns provided the cotton has no admixture of Guntur, Narasaraopet and Vinukonda cotton.

5348. *General description of Coconada cotton.*—“Coconadas” are produced in Guntur, Kistna, Godavari and Ganjam districts and the chief centres are Coconada, Bezwada, Guntur, and Narasaraopet where the cotton is pressed. The distinguishing feature of this variety is a light pink colour with silky strong staple and the best quality is produced in Palnad district, north of Narasaraopet; Palnad is the centre of hand-ginned cotton; the outturn obtained in Palnad is 350 lb. of *kapas* and 25 per cent. to 26 per cent. of lint.

(2) White Coconadas are chiefly produced in black soil in the Godavari district; this variety has a very poor outturn, viz., 165 and 22 and its staple is too short; in Ongole also about 2,000 to 2,500 bales of such cotton are produced but with less percentage of red and, as there are no ginning factories there, all this quantity is brought to Guntur and Mangalagiri where it is mixed with red *kapas*; the result is now that nearly all the factories of the above places gin red *kapas* having an admixture of five to twenty per cent. of white *kapas* which is most objectionable.

(3) Red white Coconadas are sown in May and June in the Vizagapatam district because the nature of the land is reddish black and hard. The cotton is picked and offered for sale in the month of October; its staple is worse than White Coconadas.

5349. *Trials of Cambodia cotton in the Coconada tract.*—In Phirangipuram and Kanchencherala, Cambodia was introduced by Missionaries but the results were not satisfactory as the soil being red and unirrigated, the plant was growing poorly and was bearing out not more than ten bolls whereas the Red Coconada plant which bears out 25 to 30 bolls offers the ryot three and four pickings against the two pickings of Cambodia; another factor of the failure of Cambodia is that the cattle did not relish its seed which is bigger, softer and not so sweet as the Red Coconadas.

5350. *Effect of soil and irrigation.*—The black soil and irrigation of the area sown with cotton is varied. In the Palnad and Narasaraopet tracts the soil is either black or red; each, however, has an advantage over the other. Black soil retains moisture but too much rain spoils the crop sown therein whereas too much

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drought is beneficial for the other. I noticed that cotton grown in black soil is bulky and of brighter colour whilst red soil produces comparatively redder stuff but Guntur and Bezwada cotton plantations are grown in red and black soil. On the whole, no irrigation is necessary to help the growth of cotton especially on the Godavari section, where the moisture is more than enough.

5351. *Deterioration of Coconada cotton and its causes.*—The quality of Coconadas is gradually deteriorating both as regards colour, staple and cleanliness and I attribute it to the following reasons:—

- (1) The consecutive sowing of cotton on the same land in some places.
- (2) To the ryots not paying particular attention to the quality of seed which is more or less adulterated with white and produces cotton of an uneven and dull colour with staple irregular.
- (3) To the absence of any official help and guidance.
- (4) To the careless working of the ginning factories of the district; out of forty ginning factories in my district, I had been able to see three or four only working more or less satisfactorily; I remember that the first arrivals for the season 1917 were very badly ginned on the whole with the result that the cotton could not fetch its full price; then I issued a circular to all gin factories and it was also verbally explained to many managers how the working of the gins depended a good deal on the way the rollers were grooved but few managers took any steps.

(2) I do not think the exporters can do much to help the Government because they buy the cotton in loose and not in the shape of *kapas*. We have penalized a big proportion of the cotton tendered to us as it was mixed with white stuff but after all those who get finally such cotton have to accept it as it is, as they know the conditions. I do not know what the other firms are doing here as regards white mixtures but we feel great difficulty to work when petty merchants coming from Bombay to buy small quantities for certain mills are not particular about such details and they simply take delivery of cotton rejected by firms.

5352. *Suitabilities of existing varieties.*—In conclusion, my opinion is that in this district any other long stapled cotton is unsuitable and what is required only is to improve the quality of the present variety.

Mr. A. A. STATHACOPOULO called and examined.

5353. (*Mr. Roberts.*) The average ginning percentage of Coconada cotton is 22 but it can go up to 25. We do not purchase *kapas*; we buy generally ginned cotton. The ginning percentage differs in different places but the average is 22. The best system is to buy *kapas* but it is very difficult in this district. We are hoping to be able to introduce it however. We started it last year and this year we hope to buy more *kapas*. I consider the staple of Coconadas to be very good. The staple of the best cotton which comes from Palnad is up to an inch at the best. The average staple is $\frac{1}{2}$ inch to $\frac{3}{4}$ inch or about $\frac{2}{3}$ of an inch. The staple is about the same as Northernns but the average of Red Northernns is better on the whole. I shall call the staple of Northernns an inch at best; the average is three-fourths inch.

5354. I have had six years' cotton experience in Egypt, two years in Delhi, one in the Hubli district, one in the Tinnevely district and just one and a half in this district. There are vast differences between the methods of business in Egypt and the ways prevalent here. There are many Europeans interested in cotton cultivation in Egypt. There are no Europeans interested directly in cotton cultivation here. In Egypt the local merchants always buy *kapas*. The merchants who buy *kapas* and send it to Alexandria are nearly all European firms which have their own experts, who classify the cotton according to its own merits and have the different classes ginned separately. They then send it to Alexandria for shipment to England and other places. The best point is that it is *kapas* which is bought. The buyers have the gins to try the outturn and they are able to get better results in the way of staple every now and then because the Europeans themselves are cultivators. We have no European cotton planters here; planters here have taken up tea, etc. The methods in Egypt are more scientific. As regards the arrangement for the destruction of boll worms, the Government have issued leaflets to the cultivators in which everything is explained by expert inspectors. There is absolutely nothing in the way of compulsory markets; each firm buys *kapas* according to its requirements. The firms are directly in touch with the landholders. The small landholders amalgamate their cotton with the cotton belonging to the big landholders, and the whole of the cotton is marketed together in big lots. The firms offer their prices and the firm offering the highest price gets the cotton. This is all done when the cotton is ready. Very few firms buy forward. They prefer to buy ready, because, on account of their commitments to Europe and other places, they must see the cotton which they are going to get.

5355. One cannot secure quality unless one buys ready cotton. Nearly the whole of the business done in my district is for forward buying. People sell without having anything for sale and they take the chance of the market. When the market is going up, they have to buy in order to deliver. Some of the middlemen are substantial men but generally they are dependent on those who sell to them. Sometimes the cultivators themselves speculate. In the market, there is a tendency to supply the lower quality. When the market is against them, the middlemen buy at any rate in order to cover themselves because if they do not cover themselves and fulfil their obligations to the firms, the firms may have to buy on their own account. And if the firms buy on their own account, it means that the middlemen lose even more money.

5356. We generally buy the fair average quality of the district. The system of forward buying makes it difficult to differentiate between good and bad cotton but there are many dealers who guarantee to us that they will deliver cotton from a certain district of a certain quality usually better than the average. That has been the custom for many years and is probably because the European firms do not buy *kapas*. The ginning factories are not unwilling to gin on commission. If the European firms bought *kapas*, they could get it ginned here quite easily at reasonable rates. The difficulty is this, that those who have *kapas* have already committed themselves to those who buy for forward delivery or taken loans from them payable in cotton. Another difficulty is that no European firm in this district owns any factory with the exception of Messrs. Volkart Brothers, who have a press in Guntur.

5357. I am sorry to say that we have not got openers. There are two ways of thinking about this detail; one party is against openers on the ground that the staple becomes deteriorated by passing the *kapas* through the opener although it comes out cleaner. In my opinion, it would be better sometimes to risk the staple in order to secure a cleaner quality. In Tinnevely district, *kapas* is passed which has much leaf. The staple of Tinnevely cotton, especially of Cambodia, is much better than the staple of the cotton here. I think we badly want cotton openers in this district because the cotton which we get arrives in a very bad condition as the people are not particular with regard to the ginning. I think it is necessary to have both *kapas* as well as lint openers. The cleaning of cotton on cots is not efficient besides it spoils the quality as sometimes the

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coolies beat the cotton very roughly on the cots. It would be difficult to introduce openers in this district, because all the firms buy ready cotton. They take delivery of the machine ginned cotton and have to get it cleaned at their expense. The dealer himself gets it pressed under the supervision of the firms' representatives and the firms buy the pressed cotton and pay the dealer according to the weight of the fully pressed bales. The more the cotton is cleaned, the less the weight and so the dealers who have sold baled cotton object to cleaning and wish the cotton to be cleaned as little as possible.

5358. There is much mixing going on in this tract, especially of late with the rise in prices. The good Red Coconadas are mixed with the white cotton coming in from Tuni and Ongole districts. From these two places we get 5,000 bales of such objectionable short staple cotton which always is mixed with Coconadas because it cannot find any market by itself being a short staple style. This cotton comes to Guntur from Ongole because there are no factories to have it ginned in Ongole. So it is brought in here to be ginned with Guntur cotton. If the system of buying *kapas* instead of ginned cotton were to be adopted, this practice of mixing could be stopped in two or three seasons, as it was done in Tinnevely District where *pulichai* cotton was burnt publicly and all cultivators made up their minds that it was objectionable. This white *kapas* is brought in by rail as well as by country carts.

5359. (President.) In Egypt and in the cotton centres thereof, the merchants buy *kapas* and most of them own ginning factories. There are ginneries all over Egypt. There is no cotton grown round Alexandria. The big merchants in Egypt have generally their own gins and presses and they gin and bale themselves. All the transactions are done by the buyers and there are no intermediate people. The less people interfere, the better.

5360. (Mr. Hodgkinson.) I think the mills have forward commitments for yarn and cloth and so they have to get the cotton which is expected to produce the kind of yarn that they require. They buy forward even before the particular cotton they require is sown. I am afraid that this practice tends to deteriorate the quality of the crop because the cultivators are not careful about what they are going to sow, since firms buy fair average quality and generally do not expect better quality. I have not considered the question of establishing a future market (cotton exchange) for India in Bombay. I think it would be difficult on account of the big quantities involved and probably that is why it is not introduced. Besides many mills and Japanese shippers buy direct from particular firms with which they prefer dealings for various reasons.

5361. (Mr. Roberts.) I think it will be a very good idea to have all ginning factories licensed and to have all bales marked on their sides so as to indicate the place of origin. It would be still better to mark also the name of the pressing factory on the bale as there are so many ginning factories that it would be difficult to distinguish. It is also a very good plan to prohibit the transport of cotton except in fully pressed bales to mills or *bona fide* firms. It would be of a very great help to firms if other qualities of cotton coming into a district were stopped. For instance, such a prohibition would stop the Ongole and Tuni cotton, which is a very short stapled cotton, from coming into this district. If that were done, we should have pure Coconadas in three years again because there would be no mixing. If we started ginning factories, it would not interfere with our business if the transport of *kapas* were prohibited as we would then gin the *kapas* in the producing district itself and press accordingly. On further consideration, however, I suspect that, if the transport of *kapas* by rail were entirely stopped, it might interfere with the general principle of freedom of trade. It is a simple and fine idea but it may not prove practicable. Tuni cotton is railed to Nandyal to be mixed with Northerns the price of which is a hundred rupees above that of the ordinary Tuni cotton. That is one of the reasons on account of which Northerns have deteriorated so much. To keep up the purity of the cottons of the various districts, prohibition of transport of *kapas* is the only way if it could be managed. As to what would happen to Tuni cotton in such circumstances, I dare say it could be arranged to have it ginned separately and sold as short stapled cotton.

5362. I think it is necessary to conclude by mentioning that the Egyptian Government has arranged to obtain from factories of big firms seed to be distributed to the cultivators in every district and so the cultivators themselves can get proper cotton seed for their fields. That particularly struck me when I was in Egypt. The seed is sold at standard prices; and the value is debited to the cultivator who has to pay it along with the taxes such as irrigation.

Mr. JEAN RUTZ, Agent, Messrs. Volkart Bros., Guntur.

EXAMINED AT GUNTUR, FEBRUARY 28TH, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(a) "Deshi" short staple cotton.

5363. (1 and 2) Experience and varieties.—Since arriving in India in November 1916, I have been stationed at the following cotton markets:—

	months.
Khamgaon (Berars)	2
Nagpur, Central Provinces	2
Guntakal Anantapur District Madras	1½

and at Guntur since May 1917, without interruption. Considering that my firm keep permanent agents at the above mentioned three markets and that my stay there has been rather short, I shall limit myself to give evidence on the experience which I have acquired in the Coconada cotton tract.

5364. Area under Coconada cotton.—Area.—Coconada cotton is being grown in most parts of the Guntur District, in the Nandigam Taluk of the adjoining Kistna District, in parts of the eastern frontier territories of His Highness the Nizam's Dominions and in small quantities in the north of Nellore District.

(2) The acreage and the yield vary considerably from season to season. From 1910 to 1916, the area sown with Coconada cotton amounted to about 330,000 acres on an average, the quantity of lint produced being about 70,000 bales of 400 lbs. per year, during that period, Last season (1916-17), the acreage

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was considerably reduced and scarcely amounted to 220,000 acres, and the yield only slightly exceeds 40,000 bales of 400 lbs. The sowings for the 1917-18 crop are by no means larger than last year, perhaps even slightly smaller.

5365. (3) Size of holdings.—This is, broadly speaking 15 to 25 acres. The number of ryots holding 80, 100 or more acres is comparatively very small, whilst holdings of only five to ten acres are apparently rather frequent.

(2) I am not aware of the average proportion usually put under cotton in a holding. A number of agriculturists probably seldom make changes in their sowing arrangements, whilst the more progressive minded ones no doubt sow most of which they think will pay them best. But every ryots will sow sufficient food-stuffs to keep his family.

(3) No manures for cotton are used in this tract.

5366. (4) Yields and profits.—In an average season, under ordinary weather conditions, the yield in seed cotton amount to about 320 to 360 lbs. per acre; in a good season it probably well nigh reaches 400 lbs. I am aware that in very well situated fields, with careful cultivation, 450 lbs. and more have been obtained, under brilliant weather conditions. The proportion of lint to seed cotton is about four to one, i.e., it varies between seventy and ninety lbs. per acre.

5367. (7) Conditions affecting increase in area.—The main factor which influences the extent of the yearly cotton sowing is the constellation of prices for the various commodities grown in the district. In our district, cotton, paddy, *juar*, grams, tobacco, chillies, at times also indigo, are the chief crops. Thus at the time of the sowing of the 1917 cotton crop, chillies and indigo fetched very high rates and were therefore much in favour with ryots. The result was that much less cotton was sown. At the time of the sowings for the 1918 crop, in August and September 1917, cotton prices were at a level never reached since the American Civil War (nearly three times as high as the 1914 rates), whilst indigo had depreciated heavily. Everybody then expected a considerable increase in the acreage under cotton, but these expectations have proved wrong, and although indigo has been neglected, more chillies, tobacco and foodstuffs have apparently been sown, to the detriment of the cotton crop. I did not consider the increases in price for these commodities to be as heavy as the increases in cotton rates and thus fairly expected that cotton would be a favourite crop this year. I, therefore, am of the opinion, that other factors than the question of prices influence the agriculturist, one of them being tradition. Certain ryots stick to one or two crops for years, even if at times it would be more profitable for them to grow another commodity, which is higher in price.

5368. (8) Uses of seed and seed selection.—The seed, not used for sowing is mostly given to cattle, as it is a very substantial milk-forming food. Little, if any, seed is being exported.

(2) In the parts where hand-ginning is being practised, hand-ginned seed is exclusively used for sowing, which is of a better quality than the seed produced by machine gins. The latter is often damaged on account of careless fitting of the gin knives. Yet, ryots who sell all their seed cotton to the ginner, have to buy their sowing seed from the latter.

5369. Introduction of other types.—Apart from the fact that it would be very difficult to induce the ryots of this district to start growing a new kind of cotton, I think it would be in the first line in the interest of all concerned in the trade and manufacture that the quality grown now here be improved, so that mills which heretofore have considered the quality of Coconada cotton too low to suit their requirements may, in course of time, be able to make use of this cotton. Up to now, Lancashire has taken no interest in this cotton. With careful selection of seed, thorough method of cultivation, cautious picking, strict supervision of ginning factories and proper punishment for people adulterating, one ought to be able to improve the quality of the cotton considerably, so as to make it suitable for larger circles than in the past.

5370. Mixed crop.—A small proportion of our crop is grown as mixed crop, along with gram, etc. I doubt whether this mixed crop system is really an advantage and should rather think that it must be detrimental to the development and the yield of the cotton plants.

COMMERCIAL ASPECT.

5371. (30) Local trade customs.—Contrary to what is the custom in the markets in the Berars and the Central Provinces, where exporters frequently buy *kapas* or cotton from the ryots, mostly through a broker, exporters in the Coconada cotton tract never buy from the producer direct. The agriculturist either sells his cotton (in the case of hand-ginned) to middlemen, dealers in the bazaars or to small petty village merchants. The seed cotton is almost entirely bought up by the ginner, who no doubt partly lend out money to their ryot constituents. I believe, however, that the agriculturists down here are less in the hands of the bazaar people than they are in the Oomra districts.

(2) The ginner are dealers on their own account and it is they who sell the cotton to the exporters. Guntur, Bezwada and Narasaraopet are the three cotton markets of the district, where all the presses and most of the ginning factories are to be found. The owners of outlying ginning factories have their representatives in one of the markets.

(3) In the main, two qualities only are being marketed, at Bezwada exclusively machine-ginned, at Guntur mostly machine-ginned and very small quantities of hand-ginned. Narasaraopet arrivals consist to about three-fourth of machine-ginned and one-fourth of hand-ginned, although there have been seasons when practically no hand-ginned was brought to the market.

(4) The system of dealing is the same in all the markets. For each transaction between ginner or commission agent on the one hand and exporter on the other, a contract is made out, the essential parts of which are: the quality (whether machine-ginned or hand-ginned)—

- the quantity in *khandis* of 500 lbs.
- the price,
- the delivery time,
- the place (press) where the cotton is to be delivered.

The bulk of the business is done for forward delivery, but contracts are made also in the case of ready cotton.

(5) The seller is bound to deliver within the time stipulated in the contract, but he is at liberty to deliver the full quantity or part thereof before due date as ready. As soon as he delivers, he receives an advance of seventy to eighty per cent. of the contract rate. The balance falls due after the cotton has been pressed and weighed.

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(6) This system of buying is, on the whole, not a bad one and in an ordinary season, when the quality of the arrivals is more or less uniform, works fairly smoothly. Yet, it has also its disadvantages, principally with regard to the quality of the cotton delivered. The contract is considered as fulfilled after the cotton has been pressed and the rate is understood for cleaned cotton, i.e., the dealer has to bear the loss in weight owing to cleaning the cotton before pressing. The buyer has the utmost interest to obtain as clean cotton as possible: the seller tries to get as much weight as possible or to lose as little weight as possible. The less the cotton is cleaned, the better for him.

5372. *Cleaning of Coconada cotton.*—The cleaning work is being done by hand: first the cotton is picked superficially afterwards it passes through the hands of a double row of coolies, who beat it on a cot in the press building. If the cotton under treatment is clean, the work can be done quickly, less coolies need be employed and the press can be fed and worked without interruption. If the cotton to be pressed is of lower class owing to admixture of leaf, dust, *kapas*, etc., a double or treble number of hands is to be engaged, the cotton will have to pass the rows of beating coolies twice or, in exceptional cases, even three times. The buyer, who has to bear the charges for cleaning, is therefore at a loss, for the coolies' wages will be out of proportion to what has been calculated. If the buyer is at the same time press-owner, his position is worse. In the case of clean cotton, 150 bales can be pressed in ten hours with a Cummin's Patent Press and a sufficient number of hands employed. In the case of dirty cotton, only sixty to seventy bales, or even less, may be pressed in a day, whilst the wages are higher, the quantity of lubricants and coal used practically the same as in the case of the 150 bales. Moreover, with any amount of picking and beating, it is difficult, if not impossible, to bring the cotton on the same quality level as the cotton originally in a decent state. The buyer, who pays the same rate for both extremes, is therefore also losing in quality, as he will obtain a lower type for which the spinner pays less.

(2) Cleaning is going on in the presence of both buyers' and sellers' representatives or buyers and seller themselves. Needless to say that, in the case of employees on the buyers' side, bribery is often practised, i.e., the sellers bribe the buyers' people in order to make them lenient with regard to cleaning and weighing. Proof of such practices can scarcely ever be obtained, but suspicions in this respect are none the less not unfounded.

(3) If the cotton in the loose state is dirty and full of impurities, it is either due to careless picking and ginning or to the fact that certain ryots or dealers mix inferior cotton ("undercot") or *kapas* with full intentions, in order to get a better weight. For they know full well that the buyer cannot well reject a lot which is not clearly below what might be called the average of the season, that the cleaning work, however thoroughly it may be carried out, will never remove the impurities and bring the cotton to its original cleanliness, so that the pernicious practice of mixing inferior stuff must be paying in the end (to the ryot or seller).

5373. *Mixing of Coconada cotton.*—Certain ginners mix white cotton, which is brought in small quantities from the neighbourhood of Ongole into the good red *kapas* before ginning. I have never been able to see a pure sample of this white cotton, which is short-stapled, and lowers the quality of Coconada, if admixed. As part of the cotton seed produced in ginning factories is being used for sowing, it is obvious that by and by plants bearing white lint will appear in our fields, among the better stapled red cotton. So far I cannot say that the crop has been spoiled by this mixing practice, as the quantities thus adulterated are not large. Yet, it not stopped in time, the practice will have a bad effect on the quality and the name of Coconada cotton.

5374. *Grades of Coconada cotton.*—The two kinds marketed here are machine-ginned and hand-ginned, the latter chiefly known as "fair red," partly also as "ordinary." The difference between the two qualities lies in the ginning only, as the cotton is originally the same. One-tenth or one-twelfth of the crop, I estimate, is ginned by hand, principally in the Palnad Taluk, where part of the hand-ginned cotton is used by the ryots themselves for home spinning and weaving.

(2) The prominent feature of Coconada cotton is its brown-reddish colour. The more regular the colour, the better the class. The staple measures from three-fourth to seven-eighths of an inch. The cotton has a strong smell, and is on the whole similar to the Red Northern cotton produced on the Nandyal side.

(3) The difference between the price for machine-ginned and hand-ginned cotton varies according to demand, but under ordinary circumstances it is about Rs. 10 per *khandi* of 500 lbs. Hand-ginned often contains seed and *kapas* and some spinners consider it to be rather of irregular staple.

5375. *Markapur cotton.*—Occasionally cotton from the Markapur Taluk (Kurnool District) is being brought to Guntur and sold here, at times when the constellation of prices induced dealers to sell on this side instead of at Nandyal. This cotton is very clean as compared to Coconada and also slightly better in staple and regularly fetches a premium over machine-ginned Coconada, Rs. 3 to Rs. 6 per *khandi* of 500 lbs.

5376. *Rajahmundry cotton.*—Properly speaking, this kind of cotton is also grown in the Coconada tract, but the crop is very small, 2,000 to 3,000 bales a year, if not less. It is lower in price than Coconada, owing to inferior staple. Real Rajahmundry ought to be entirely white, but personally I have so far only seen cotton which contained a good deal, 20 to 30 per cent. red cotton. The cotton contains little leaf, but occasionally shows an admixture of seeds. Occasionally a lot of Rajahmundry cotton is brought to Guntur, but most of it is being bought by Coconada firms.

STATISTICAL.

5377. *Improvement of cotton forecast.*—I am under the impression that it is kept rather on the low side. Yet, as the figures are based on the assessment (for ought I know), one should think that they must be fairly accurate. Perhaps the figures might be made more reliable by the Agricultural Department gathering confidential information from the various cotton buyers of some importance in each district.

5378. *Improvement of other statistical information.*—As to the *pressing returns*, they ought to be made compulsory, if they are not already so.

5379. *Publication of Liverpool and Bombay prices.*—As things are now, a number of native speculators regularly receive telegraphic quotations of Bombay rates, which places them in an advantage over others, who cannot afford the expenditure for the daily telegrams. The publication of the prices ruling in the leading markets would therefore, appear to be a fair institution, as it would place all in the same position. Yet it is doubtful whether it would really be beneficial to the trade on the whole, as it might attract further speculative elements.

Madras.]

Mr. JEAN RUTZ.

[Continued.]

IV.—MANUFACTURE.

(a) *Ginning and pressing.*

5380. (36) *Type and number of gins and presses.*—My firm own a Cummin's Patent Press at Guntur, which is under my orders. This system has the advantage over the ordinary long bale presses, that a higher density of the bales and consequently a smaller measurement can be obtained, whilst the daily number of bales which can be turned out is higher than with the long bale presses.

5381. (37) *Size of bale.*—The measurements of the bales are as shown below—

	inches.
Breadth of bale	19½
Depth	19
Length	32 to 38

according to requirement. The cubical contents per bale of 400 lbs. thus varies between about 7 and 8½ cubic feet. In hot, dry weather, the cotton cannot be compressed as much as during the monsoon.

5382. *Conditions in ginning factories.*—The ginning factories in this district are all native owned and in many cases in connection with a rice factory. The factories are small for the most part, twelve to sixteen double roller gins being the rule per factory. I think that in many cases the factories are not too well managed. The profits are as a rule distributed to the partner to the last penny and little is apparently done with regard to repairs. Thus it happens that in a factory of say twelve gins only six or seven are in working order. It may be that the essential parts are difficult to be obtained at present. I also doubt whether the same well trained gin fitters as in the *Oomras* districts can be found down here.

5383. (38) *Saw gins versus roller gins.*—As far as my knowledge goes, only roller gins, single or double according to necessity, are being used throughout India, except in the Dharwar District, where saw gins are being worked. I believe that Dharwar cotton has no longer the good name it once used to have in Europe. One of its characteristics is cut fibre and "gin fall."

5384. (40) *Factory labour.*—I have not so far experienced any difficulties in obtaining labour in this district.

5385. (42) *Effect on machinery of replacement of short staple cotton by long staple.*—In the case of the introduction of a long-stapled cotton no change would be necessary in our pressing machinery. Nor do I think that a change in the ginning system would be required.

V.—GENERAL.

5386. (46) *Attitude of buyers to improved cotton.*—Exporters are certainly inclined to pay a premium for long-stapled cotton over short-stapled cotton, as long as this also is up to the latter in class, colour, etc., and spinners are in a position to pay a higher price for it. From the point of view of the ginner, matters look, however, often different. For him, who buys seed cotton from the agriculturist, the outturn in lint is of great importance. Thus, I remember that at Khangaon, the so-called *ghat* cotton, which is of a somewhat better and silkier staple than *gaorani*, fetches, or fetched, Re. 1 less per *bhoja* seed cotton of 392 lbs. *Roseum* cotton, which gives a good ginning outturn, fetches a premium in many cases although its staple is rather short and rough, which will scarcely be suitable for spinning fine counts.

(2) It would therefore seem questionable whether the ryot sees any advantage in growing long-stapled cotton instead of a short-stapled kind. If he has been accustomed to grow the latter for years, and it fetches the same or even a slightly better price than long-stapled cotton, it would no doubt be very difficult to induce him to take to long-stapled cotton, especially if other methods of cultivation are required. He would only do so if the yield per acre were so much higher as to at least make up for the difference in price between the two kinds of seed cotton.

5387. *Advisability of trials of Cambodia cotton.*—Apart from the question of water, the ordinary cotton soil of this district is probably not very suitable for the cultivation of Cambodia cotton. On the other hand, it would be interesting to know whether part of the land now under paddy would do for this long-stapled kind. It would be worth while to make a trial, the more so as a start has already been made in the Northern tract, Nandyal circle, where weather conditions and soil are probably not so very different from the conditions on this side of the *ghats*. As far as I know, the quality of this Nandyal-Cambodia is not bad and it fetches a nice premium over country cotton.

VI.—IRRIGATION.

5388. *General.*—I have no experience in this line. But I should think that the Kistna river and the canals in this district could be made useful, should American cotton be introduced in this district.

Mr. JEAN RUTZ called and examined.

5389. (*Mr. Roberts.*) The figure 70,000 in paragraph 5364 of my written evidence is wrong. It should be 63,000, excluding Rajahmundry cotton. The shipments of Coconadas to Liverpool used to be 2,000 to 3,000 bales on the average. There were three firms who used to take it. What went to London was probably intended for transshipment to Holland and Belgium. Coconada cotton is used in Italy for *khaki* cloth. I was trained in the central office of our firm at Winterthur, fifteen miles from Zurich. My experience of buying Northerns was gained at Guntakal where I was for five weeks. I mean to say that whatever I knew about buying of Northerns before I came to Guntur, I chiefly learned during my five weeks' stay at Guntakal. I do not know the present difference of price of Coconadas and Northerns exactly but the difference per *khandi* of 500 lbs. is about Rs. 25 in favour of Northerns. The length of the staple of Coconadas is three-fourths to seven-eighths inch. Northerns are only a very little better in staple which is only about seven-eighths inch. It is more regular in staple.

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5390. I do not think that the system of forward buying has great influence on quality, at least as far as the Coconada markets are concerned. Our firm has bought most of the forward cotton this year. We never had so much forward business with distant delivery times here before. I know that Mr. Gill thinks that the quality will be adulterated because the rates have gone so high but after all we are protected by our contracts which have been made for fair average quality of the season. When the stuff is too bad, it is not accepted. We do not know what the quality is till the people begin to deliver. I do not think that the quality varies very much. Marked differences can, however, be observed between arrivals from different tracts and villages. A good deal depends on the way the ginneries work. We can insist on the quality of the arrivals. We pay the same price for fine quality as we do for less good quality because we make contracts for good average quality. We do not pay any premium for good quality. This is not quite correct in as much as cotton arriving from the border of the adjoining Northern tracts as a rule realizes a premium of several rupees. If the deliveries are of cotton which comes within the limit of fair quality, we cannot reject it. I have never been able to allowance cotton of bad quality but, if it is very bad, I reject it. That very seldom happens. The dealers also have a hold on the buyers. They can take their revenge if one is too strict against them. In this matter much depends on the attitude of other buyers who may at times be very lenient as regards quality. In forward buying, if a portion of the crop—say one fifth—were of distinctly better quality, we could not pay any more for it as things are now as we cannot reduce the price of the lower quality. Our sales are based on our purchase rates. We only classify when we receive the cotton. I buy for our Bombay firm, at times also for Calcutta and Pondicherry mills. I have no margin from which I can pay extra for good quality. I have only to see that they get as good stuff as possible. All our business is forward business even during the season; we do not, as a rule, see the cotton that we buy. It very seldom happens that we can look at the cotton and then buy it, because the local dealers in most cases first make their sale contracts and afterwards only get their cotton from the interior.

5391. I have some experience of Berar. There we buy practically all our cotton ready. At Nagpur, there is an auction system and the cotton is paid for according to its merits. In Khamgaon, there is no auction system but one looks at every cart that arrives and takes lots from different *dahals*. One is in the market every day for two months or more. In an open market, it is possible to pay for better quality. I think that the Nagpur system is the best for the ryot as each separate lot is looked at in the auctions, but I doubt whether it would suit a big market. The man who brings in good cotton makes much more than the man who has only bad cotton. The Nagpur market is a smaller one than that at Khamgaon.

5392. We pay less for hand ginned cotton than for machine ginned as it is supposed to contain more leaf, seed, etc., and to give about four or five per cent. more loss in the blow room than machine ginned. I have heard from Indian mills that the staple of hand ginned cotton is very irregular. We are now trying to introduce cotton openers in this tract, i.e., we are making investigations to this effect. I think that it will be better to introduce cotton openers than *kapas* openers but the best thing would be to have both. By using openers, the staple might perhaps suffer. There are no openers here and the present system of cleaning by cots is not adequate.

5393. Cotton cannot be pressed in dry weather with the same intensity as in damp weather. In the monsoon season, we can press to the smallest measurement. One can tell the weather by the number of hoops that burst.

5394. (Mr. Hodgkinson.) I have said that Lancashire has taken only three thousand bales a year of Coconada cotton. That is a very small quantity but it may be said all the same that Coconada cotton belongs to the few Indian kinds which have to a certain extent found favour in the eyes of Lancashire, even though that applies to Coconada in small measure only. I only heard that recently. The sentence in my written evidence that "Up to now Lancashire has taken no interest in this cotton" is therefore not quite correct.

5395. Coconadas cotton would be cleaner if improved methods of picking were adopted and there were supervision of the ginning factories. I think it is a disadvantage that all the ginning factories which deal with this cotton are Indian owned. They are mostly in a very bad state, I think a good deal is done in the ginning factories which ought not to be done, for instance, seed and inferior cotton are mixed with good cotton. The seller tries to lose as little as possible in weight. What falls below the cot belongs to the dealer who takes it away. It is a mystery to me where all the stuff that falls through the cot goes. It is partly fluff and dirt but contains also good cotton, *kapas* and cotton seed. I think that, after cleaning, it is mixed in a fresh lot of *kapas*. A system of licensing ginneries would improve matters. I would be in favour of such a system as it would give a guarantee that a man would risk something if he did not deal fairly.

5396. I do not think that any damping is now being done. Last December, I sent off a lot of cotton to Bombay and there was tremendous loss in weight. So I came to the conclusion that damping must have been done somewhere in the case of that particular lot. I had no complaints from Bombay as regards dampness but there were continuous complaints for three months as regards weight, a thing which had never happened before.

5397. The usual form of adulteration is of *kapas* with ginned cotton and that occurs principally in the case of hand ginned cotton which comes from the Palnad Taluk. This cotton passes through two or three men; the ryot sells to the merchant in the village who sells to the dealer in the town and then it comes to the buyers. I have not seen any other form of adulteration, e.g., adulteration with stones or sand here.

5398. I think it would be worth while to make a trial of Cambodia on paddy land. One of our former agents tried to grow Cambodia here on the ordinary soil but it was not at all a success. The red soil is rather too rocky for it.

Sir CLEMENT SIMPSON, of Messrs. Binny & Co., Ltd., Madras.

EXAMINED AT MADRAS, MARCH 4TH, 1919.

Written statement.

5399. *Desirabilities of improving length of staple of cotton.*—In response to the invitation to give evidence I regret that I can answer only a few of the questions as put, but I gather that the object of the Committee in asking Indian manufacturers to give evidence is, to ascertain whether they are of the opinion that it is to the economic interest of India and of the manufacturer, that an effort should be made to improve the length

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[Continued.]

of staple grown in this country. To this I have no hesitation in replying in the affirmative, and I welcome the opportunity to representing to you the manufacturer's side of the question which appears at present to receive scanty consideration. Directors of Agriculture appear to consider the question of output per acre as paramount and if this policy becomes general, manufacturing interests will suffer very serious injury and the progress made by Indian cotton mills will be set back by thirty to forty years.

5400. *Desirabilities of greater co-operation between the Agricultural Department and the trade.*—To judge by the notices we read in the Press, which I can only conclude are demi-official communiqués, an onlooker would think that all concerned had good reason to be pleased. This is certainly not the case from the cotton manufacturer's standpoint, and I trust that one result of your Committee will be a recommendation for a little more representation of the manufacturer in the councils of Agricultural Directors. The principle of Trusts, Committees and Councils is recognised in the representation of shipping interests at every important port and why the same principles are not spontaneously extended to other branches of commerce such as agriculture and industry is not apparent.

(2) An official may be thoroughly trained and qualified to take charge of the Agricultural Department of the Department of Industries on their technical and executive sides, but may still be unequipped on the commercial and industrial sides.

(3) Some Directors no doubt seek commercial information, and all credit to them, from various sources, but others do not. To ensure some sort of co-ordination of purpose and effort I put forward the suggestion:—

1. In order that the following commercial interests may be adequately represented on such a committee by:—

- (a) The Cultivator.
- (b) The Indian Manufacturer.
- (c) The Exporter.

2. To secure some continuity of policy as Directors constantly change.

5401. *Identity of interest of manufacturer and cultivator in production of long staple cotton.*—There may be some conflict of opinion as to whether the interest of the ryot is the same as that of the manufacturer, but in the long run I cannot think that the difference will be distinguishable. The cloths required by the Indian people can be far better produced from American than from Indian cotton. The nearer the Indian ryot can get to American in the quality of the cotton grown, the nearer will the Indian manufacturer get to the quality of cloth required by the Indian people.

(2) The only real advantage the Indian manufacturer has over the Lancashire and American manufacturer (leaving out all questions of duties and excise) is the geographical one, a perfectly fair advantage, but this natural advantage disappears if the Indian manufacturer has to import cotton from America to meet the demands of the Indian consumer, or has to manufacture short staple cottons into cloths unsuited for India and export them to distant markets.

(3) It follows that the Indian ryot will share the geographical advantage if he can produce a cotton suited to the clothing needs of India. That he will get a better price for his cotton from the Indian manufacturer than he would if his cotton has to be exported to foreign markets in the raw or in the manufactured state to countries possibly protected by hostile tariffs.

5402. *Improvement of indigenous in preference to introduction of exotic varieties.*—We have excellent staples that have stood the test of time. With improved seed, cultivation and marketing, I believe that these staples could be further improved and that it is preferable to so improve them rather than to introduce exotic long stapled varieties. It is almost impossible to keep the exotic staples to themselves, the result of mixing the long and the short is to reduce the value of the long to that of the short. The risk of deterioration of exotic cotton is great. I therefore advocate the policy of working up the sun and drought hardened varieties that have survived in preference to running the many risks of importing varieties that may take years to acclimatise properly, that when acclimatised will require constant nursing and in spite of all will, in all probability, decline in staple value. If exotic varieties could be segregated in isolated plains, it might be different, but in this Presidency this is not possible.

(2) As to how an improvement in the Indian staples can be effected is a question more for the agriculturalist than for the manufacturer, but from what I have read and seen of the various experiments with imported seed, I have come to the conclusion that the soundest line is to accept the indigenous growth as the best for the District and aim steadily at improvement of the staple. This may be a slow and laborious method, but it will ensure the least dislocation to the ryot and the buyer as represented by the Indian manufacturer.

5403. *Colour and outturn versus length of staple.*—To turn to local conditions, your attention has been drawn to certain correspondence with the Director of Agriculture (Annexure) on the question of Northern and Western cottons, in my opinion, very important varieties. The conclusion I have come to is that the Director of Agriculture and his staff attach to much importance too colour and output. As a manufacturer, I consider colour is of secondary importance to length and strength of staple. Apart from other considerations, there is a very large demand for dyed and bleached cloth all over the world, for which cotton of poor colour but good staple can be used. The Agricultural Department is lukewarm in opposition to the introduction of good coloured short stapled cottons considering that output per acre is of more importance than length and strength. This, in the long run, is a shallow short-sighted policy. The Department, while complacently satisfied with the work done south of Madras, would, it appears, be well content to see the rest of the Presidency produce a white short stapled heavy producing variety.

(2) My opinion is that every effort should be made by the Agricultural Department in all cotton producing districts to increase the length of staple by selection and improvement of the indigenous staples, and the staff increased, so that such effort may be concurrent all over the Presidency and if possible all over India. The surest way of increasing the value of the Indian crop and adding to the reputation of India as a cotton producing country, is to improve the length of the staple and the cleanliness of the marketing all over the country. The addition of a quarter of an inch to the short stapled varieties of Bengal and Northern India would do more to improve the name of Indian cotton in the markets of the world than the addition of the same length to the Brouh or Cambodia crop. An improved reputation and value cannot be effectively built up by improving the staple in one district and letting it down in another as some Directors of Agriculture would appear to think.

(3) The Department pleads that it cannot control the ryot's planting. No manufacturer suggests that the Agricultural Department should coerce or interfere with the ryot's crops, but they do expect the

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[Continued.]

Department to educate, guide, elevate. I think the Department is a bit too modest as the efforts of the ryots in the Northern and Western districts to degrade their quality and increase their output have only become manifest since the advent of the Agricultural Department; for years when prices were much lower than they have been of late, the ryots have been well content and, in many cases, they have now amassed fortunes with the old type.

(4) A splendid field for improving the length of staple is the Guntur District. From the Director of Agriculture's standpoint, the colour is a disgrace and the cotton should be unsaleable, but the Department neglects this district and selects for left-handed attention the more valuable staples of the Northern and Western districts.

(5) Short stapled cotton is of very little value to the progressive Indian manufacturer whom I consider to be the ryot's first and best customer or to Lancashire who should come second. From the Imperial standpoint also short staples should be discouraged as unsuited, for our manufacturers and our markets.

II.—COMMERCIAL ASPECT.

5404. (30) **Local trade customs.**—We buy for the most part at our own agencies, pressing the cotton at presses under our control, paying for the cotton on the cleaned and pressed weight. In some localities, we pay for cleaners, in others the sellers pay; the under-cot stuff is the property of the seller, we take and accept the cleaned cotton only. We give advances on cotton, tendered against contracts, actually on the press premises awaiting cleaning and pressing. We enter into contracts with dealers for forward delivery.

5405. (31) **Standardization of commercial names.**—We buy for the most part the following cottons :—

Northerns	{ Nandyal Tadpatri Prodattur Adoni
Westerns	{ Raichur Bellary
Cocoonadas	{ Guntur Tiruppur (Coimbatore District)
Cambodia	{ Virudupatti
Jawari	{ Devangeri (Mysore)
Kumptas	{ Bijapur District

We also buy Dholeras, Broach and other Bombay varieties through Bombay cotton firms.

5406. (32) **Buying agencies.**—I consider the best form of buying agency your own agent and pressing factory.

III.—STATISTICAL.

5407. (35) **Publication of Liverpool and Bombay prices.**—I think this question should be settled by the growers or sellers up-country, but my experience is that these parties are already as well informed as the buyers. They quite up to time as compared with Madras any way.

IV.—MANUFACTURE.

5408. (42) **Effect on machinery of replacement of short staple cotton by long staple.**—There is no difficulty in adjusting modern machinery in Indian mills to spin upto 40s which is about as fine as we want to go.

5409. (43) **Counts spun and market for yarn or cloth.**—We spin 8s to 40s and we cater for the Indian, Burma and Straits markets.

5410. (45) **Effect on cotton market of replacement of short staple cotton by long staple.**—Longer stapled cotton would result in an advance in price to a position nearer to the quotations for American cotton and India would become much more important so far as the British Empire is concerned as a cotton grower than it now is.

V.—GENERAL.

5411. (46) **Attitude of buyers towards improved cottons.**—My experience is that a higher price is invariably forthcoming for cottons of improved growth.

5412. **Marketing of cotton.**—The marketing of cotton calls for some remark. Generally speaking, there is not much to complain of in the cotton grown in south of Madras; it is clean, free from seed, fairly free from leaf and not much adulterated with unginned *kapas*.

(2) North of Madras, and over the boundary Bombay side and Mysore, the marketing is not good, and deliveries contain seed, much leaf, unginned *kapas* and other impurities. The marketing gets better rather than worse, but there is room for vast improvement. The loss in weight could and should be brought down by at least ten per cent.

(3) The remedy is in the buyers' hands. I am not suggesting legislative interference, I merely state the fact, a fact which prejudices the reputation of some very excellent cottons, but these defects are quite as marked in the short stapled varieties of Guntur as in the longer staples of Nandyal, Adoni, Bellary, Devangeri in Mysore and the Bijapur District of the Bombay Presidency.

5413. **Ginning of cotton and necessity for trained mechanics.**—The ginning of cotton speaking generally is bad throughout the Presidency. The gins are overspeeded and consequently badly overworked. Repairs and renewals are neglected once the season starts, and the result is the cotton is needlessly thrashed and cut about. This grave fault might be in some degree tackled by the Director of Industries, as one of the chief causes is the great scarcity of trained mechanics.

(4) I think our Government instead of spending large amounts on new higher educational colleges like the Engineering College might spend a tithe of what such an Institute costs on education and training the working classes. Beginning at the top instead of at the bottom is somewhat manifest in our educational and industrial policy. We try to make men before we train boys. We seek to make employers, manufacturers, overseers and engineers of men who have not learned to submit to control or to control themselves, lessons which the man who rises from the bottom learns in a very practical school. There is a constant demand for mechanics of all kinds, but the Madras workman has never had a chance of proving his worth in this capacity trained as he has been in our somewhat rough and ready workshops.

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[Continued.]

5414. **Long staple versus short staple cotton as affecting the Indian cotton market.**—When I say in paragraph 5399 above the progress made by Indian cotton mills will be set back by thirty to forty years, I refer to the counts of yarn and the quality of the cloth. The Northern and Western cotton we got thirty to forty years ago was very much like the true types of these cottons to-day, but the machinery in those days was not nearly so well adapted to make the most of Indian cotton, neither was the labour so well trained. The highest count spun in the Buckingham and Carnatic Mills was 24s and the output of the mills went for the most part to the Far Eastern markets in the shape of 10s to 20s reeled yarns and 12 lbs. to 14 lbs., 36 inches by 40 yds. sheetings. As machinery and labour improved, the highest counts spun gradually rose to 40s from the same cottons, which enabled the Indian manufacturer gradually to drop out of the Eastern markets and work into the Indian to his own benefit, the grower's benefit and that of the Indian cloth buyer. If short-stapled cottons are substituted for those hitherto available and a *roseum* type becomes the basal supply, our output will be quite as restricted in range of counts as it was thirty to forty years ago, and the bulk of the output will again be quite unsuited for the Indian cloth buyer.

(2) China produces short-stapled cotton, possesses spinning mills and is protected by tariffs, so it is, I think, clear, that if the Indian grower looks to China or Japan as the ultimate market for his cotton, either raw or manufactured, he must in the long run get a lower price than if he produces a cotton suited to the Indian manufacturer for the cloth requirements of his own country, the adjacent markets of Ceylon and the Straits, and the Lancashire spinner. The alternative market for short-stapled Indian cotton is the continent of Europe, a market protected by tariffs for manufactured goods, and where the raw material would have to compete with low grade American and wastes from the mills of Lancashire. Whether the Indian short-staple grower looks to East or West, the geographical advantage for a large part of his output will be gone, and the value of long staples will be enhanced to the prejudice of himself, the Indian manufacturer and the Indian consumer.

ANNEXURE.

Copy of correspondence between Messrs. Binny and Company, Limited, and the Director of Agriculture, Madras, regarding improvement of long staple cotton.

Letter from Sir Clement Simpson, Managing Director, Binny and Company, Limited, Madras, to the Secretary, Indian Cotton Committee, Camp, India, dated 8th October 1917.

We have the honour to enclose copy of correspondence with our Madras Agricultural Department on the question of the improvement or rather the maintenance of quality of stapled cotton which we trust you may find of some interest. We view with much apprehension the introduction of short stapled, heavy crop cottons that can only temporarily benefit the ryot, or permanently benefit the continent and Japan. The Indian markets want fine cloths not heavy ones. We consider too much is made of colour and too little of staple, too much of output per acre and too little of quality and marketing. We know that Directors cannot dictate what the farmer has to grow, but we understand that the Agricultural Departments exist to guide and direct the grower which is all we ask the Director wholeheartedly to do. In the long run the interests of the grower and the interests of the manufacturer must become identical. In conclusion, may we say that we are very pleased to learn of the appointment of your Committee as we attach the very greatest importance to the improvement of indigenous staples by methodical selection in each district, development on these lines will be slow but sure.

Enclosures.

(i) *Letter from Sir Clement Simpson, Messrs. Binny and Company, Limited, to the Director of Agriculture, Madras, dated Madras, the 11th May 1917.*

We have the honour to draw your attention to certain varieties of white cotton that are being introduced round Nandyal of good colour but poor staple.

In our opinion, it is most desirable to persuade the ryots to adhere to the good Northern variety of cotton which has a better staple than any other Indian cotton we know of.

Colour is no doubt important for some markets, but if India is to be self-supporting in the manufacture of cloth, staple is vastly more important than colour.

We send you samples of the cottons we complain of and the seed they are said to be grown from. The mill reports on each of these cottons are most adverse.

We have given our agent instructions to buy no more of these varieties, but we are afraid it will take a little more than this to get ryots back on the old lines, hence this letter to you.

(ii) *Letter from G. A. D. Stuart, Esq., I.C.S., Director of Agriculture, Madras, to Messrs. Binny and Company, Madras R. O. C. No. 477-P., dated Madras, the 16th May 1917.*

I have the honour to thank you for your of 11th, forwarding samples of cotton and seed from Nandyal. I note that only one sample is said to have been bought from the Government farm. The other two were apparently bought from ryots by your agent and it does not seem clear that they were grown from seed supplied by the Agricultural Department.

2. I am, however, asking the Deputy Director of Agriculture, I to III circles, to enquire into the reasons for the poor quality of these cottons and to see your agent at Nandyal in the matter.

(3) In the meantime, I should be glad if you would let me have particulars of the mill reports on these cottons.

(iii) *Letter from Sir Clement Simpson, Messrs. Binny and Company, Limited, to the Director of Agriculture, Madras, dated Madras, the 17th May 1917.*

We have the honour to acknowledge receipt of your R. O. C. No. 477-P., of the 16th instant, and in reply we enclose copy of the mills report on samples of so-called Government White Northern and Government farm grown White Northern No. 2.

We have not bought cotton from the Government farm.

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[Continued.]

It is the introduction of these qualities into the district that we deprecate instead of the improvement of the staple of the ordinary Northern which we consider one of the best cottons grown in India, certainly the best procurable here.

MILL REPORTS.

So-called "Government" White Northern.

Jamalamadugu Press.—This sample is rather weak when compared with good White Northern and also contains a good percentage of short fibres, it is much cleaner and loss would be about twelve per cent. We do not advise its use in any of our mixings.

Grown at Government farm "No. 2 White Northern."

Jamalamadugu Press.—This sample has a good white colour, the staple is uneven and weak. It is clean being free from seed, leaf and there is very little sand. Loss about ten per cent. There is no comparison with good White Northern and we should certainly not advise its use in our twist mixings.

Madras, the 17th May 1917.

(iv) *Demi-official letter from G. A. D. Stuart, Esq., I.C.S., Director of Agriculture, to Sir Clement Simpson, Manager, Messrs. Binny and Company, Limited, No. 241-D, dated Madras, the 5th June 1917.*

I enclose for your information two reports about "Akola" cotton in Bellary. Akola is the site of a Government farm in the Central Provinces from which Clouston's *roseum* cotton is being spread. I believe that this is identical with *pulichai*, but I am getting a sample direct from the Central Provinces to make certain. The rainfall last year was exceptional, but if this cotton is going to yield anything like 200 lbs. of lint per acre in average years, then I do not see how we can prevent it knocking out Northern and Westerns altogether. *Roseum* appears to command a fair price in the Central Provinces in spite of its short staple.

Extract from the weekly report of Agricultural Demonstrator, M. R. Ry. S. Ramaswami Pillai, Bellary, for the week ending.

(1) 29th April 1917—

Saw Sub-agent of Messrs. Volkart & Co. at Adoni and learned from him that *pulichai* cotton, known locally by the name of Akola cotton and grown as a *mungari* crop in red and intermediate soils, was mixed by merchants with the Western cottons grown in the *hingari* season. There is a large demand for Akola cotton seed at Adoni. M. R. Ry. Sivaraj Singh of Adoni enquired me if I could supply 500 maunds (13,000 lbs.) of this seed. I informed him that it was not sold by the department. He and other ryots intend to fetch the same seed from Akola direct.

(2) 6th May 1917—

30th April 1917.—Journey from Adoni to Kotegal village and back to Adoni and thence to Hagari by the mail train. Inspected at Kotegal *pulichai* cotton known locally by the name of Akola cotton. This cotton is sown as soon as the south-west monsoon commences, i.e., in the same season as *mungari jonna* and is confined now to red and intermediate soils. Picking of *kapas* commences in October-November and in a normal season ends in January-February. But the cotton sown in the last season continues to yield even now owing to November and February rains. The summer pickings have given more yield than the season pickings. The owner of a eleven acres field located near the village estimates the season picking at 120 maunds and the summer picking at 150 maunds of *kapas*.

(v) *Demi-official letter from Sir Clement Simpson, Messrs. Binny and Company, Limited, to G. A. D. Stuart, Esq., I.C.S., Director of Agriculture, Madras, dated Madras, the 12th June 1917.*

I have to acknowledge your demi-official 241-D, dated the 5th June.

The question of the most suitable cotton to grow may be approached from several sides and your department has a good deal to consider, but chiefly no doubt the interest of the grower.

The interest of the manufacturer is what concerns us. The manufacturer utilizes, to weave a reasonably good cloth, two classes of cotton—

1st.—A strong fairly long staple cotton for his warp or twist which has to bear the friction of manufacture and on the quality of this cotton the quality of his output depends.

2nd.—A cotton for weft. Here there is comparatively little friction, and strength from the manufacturer's ordinary standpoint is of very little importance, consequently he considers colour rather than strength.

Most of the cotton grown in India is only suitable for weft, and in the countries to which it is exported, is probably used with American cotton wrap.

We have used or tried nearly every well-known staple of cotton grown in India for warp, and we may say that the very best cottons for this purpose, from our experience as Indian cloth manufacturers, which extends over 35 years, are Northern and Westerns. These two staples have been our stand by through all these years.

Akola is not a good warp cotton, we know it well.

What I want you to consider is that if India is ever to become self-supporting in the way of cotton, a reasonable quantity of warp cotton must be grown somewhere, and we venture to suggest that it is very important that your department should devote considerable attention to reconciling the grower's side of the question with the manufacturers by endeavouring to increase the output per acre of the Northern* and Westerns staple before deciding to encourage the weaker growths, which may give a larger output of whiter cotton per acre.

For a few years the grower may do better, but if the same policy is followed throughout India the day will come when India will have to import its warp cotton and the bulk of the weft cottons will become a drag on the market.

Signs of this are not wanting already in Devangeri and elsewhere.

* N.B.—These staples are grown north of the City of Madras.

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If power looms are to be worked in India at the speed and efficiency of the looms at home, we must grow warp cotton at least as good as Westerns and Northern, and if Indian war requirements are to be met by India which is the avowed policy of the Government, these qualities want improving by every means at your disposal.*

That even the hand loom weavers prefer a yarn spun from warp cotton we know from our experience with our surplus yarn production. Our surplus warp yarn always commands a higher price than our surplus weft, though inferior in colour.

We may perhaps also mention that you will see at Madras and at Bangalore the only automatic self-shuttling looms in India, and the use of these looms is absolutely impossible without a very high standard of warp.

(vi) *Letter from G. A. D. Stuart, Esq., I.C.S., Director of Agriculture, Madras, to Messrs. Binny and Company, Limited, Madras, R. O. C. No. 477-488-P., dated Madras, the 2nd July 1917.*

With reference to your letters, dated 11th and 17th May last, forwarding samples of cotton and seed from Nandyal, I have the honour to inform you that I have enquired into the matter and find that the admittedly poor quality of our No. 2 cotton this year is due to the abnormal season. The rainfall was over seventy inches as against an average of thirty inches.

2. I will first deal with your remarks as to the relative importance of colour and staple. On this point the Deputy Director of Agriculture Mr. Hilson, writes as follows:—

As regards this firm's reference to the relative importance of colour and staple, might I once more state the case in regard to the improvement of northern.

There are two grades (1) White Northern and (2) Red Northern. Both of these cottons are a mixture of two species *Gossypium herbaceum* and *Gossypium indicum*. The general characters of these two species are as follows:—

	Herbaceum.	Indicum.
Yield of <i>kapas</i>	Low to high.	Fairly good.
Ginning outturn	Do.	Low.
Colour of lint	White to creamy	Creamy to red.
Strength of lint	Weak to fairly strong.	Strong.
Length of lint	Short to fairly long.	Fairly long.
Fuel	Harsh to soft.	Soft.

Now *herbaceum* preponderates in White Northern (white is here a relative term) and *indicum* in Red Northern. It therefore follows that White Northern is really poorer cotton than red. Yet Red Northern sells at a rate from Rs. 5 to Rs. 10 less than white.

It is obvious then that the Nandyal market favours colour rather than staple. It is also obvious that in the *herbaceum* plants lay the best chance of improving fairly quickly the ryots' returns from this crop. Until we can produce an *indicum* which is no poorer in quality of staple than Red Northern, but has a high ginning outturn, good staple is going to mean loss to the ryots unless it is paid for on quality. Are the buying firms, or is any buying firm prepared to do this?

3. For these reasons we have selected a *herbaceum* cotton No. 2 for distribution to ryots. Now this cotton is more susceptible to heavy rainfall than *indicum*. Consequently, this year, our No. 2 which is pure *herbaceum* was poorer than ordinary White Northern which is a mixture of *herbaceum* and *indicum*. In ordinary years our No. 2 is better than ordinary White Northern as you yourselves have frequently reported.

4. The sample of "Nandyal Americans" sent by you is not Cambodia but mainly Dharwar American mixed with some Cambodia and some Northern. We have had nothing to do with introducing Dharwar Americans.

5. In this connexion, I would invite your attention to my letter R. O. C. No. 4771-G-1, dated the 2nd December 1916, enclosing a copy of a report by Mr. Hilson on our three selections Nos. 2, 14 and 50. You will see from this that No. 50 which gives the best yield but the worst staple is a *herbaceum* cotton, while No. 14 which gives a lower yield but a good staple is an *indicum*. I am awaiting a spinning report on No. 14 this year before deciding whether to put it out. But I am convinced that we shall not be successful in getting ryots to grow it, unless the buyers will pay a premium for its staple to compensate for its low ginning percentage.

(vii) *Letter from Sir Clement Simpson, Messrs. Binny and Company, to the Director of Agriculture, Madras, dated Madras, the 4th July 1917.*

We have the honour to thank you for your No. R. O. C. No. 477-488-P. of the 2nd instant which we regret we do not find very reassuring.

We consider Red Northern cotton the best spinning cotton in India, next to it comes White Northern which no doubt is the mixture you describe.

If the colour of these cottons were better and the marketing cleaner, they would command a higher price than Broach.

There is a market for all kinds of cotton, no doubt cotton of any colour or staple would find a market at Nandyal or elsewhere, but this is not a sound reason for debasing one of the finest cottons grown in India for a fugitive advantage to the grower.

The statement that Nandyal market favours colour rather than staple is a superficial truism. Other things being about equal, white cotton is naturally given preference, but the colour of Egyptians did not prevent their establishing a good market for themselves, but it was their staple that did it. White Northern certainly sells at a higher price than red, but Red Northern on account of its staple sells at a very much higher price than Cocos of like colour.

If the Agricultural Department is deliberately going to sacrifice staple for colour all over India, they will do irreparable damage to Indian cotton and rapidly increase the relative distance in price between Indians and Americans which it should be its aim to equalize.

To meet the requirements of the army during this war, we have found it impossible with our Indian cottons to give the strength per square inch that the army authorities have been used to in their supplies from

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Europe. We have done all we can to bring up the strength and searched the Bombay market for better staples, but the authorities have had to meet us and relax their standards. Whether this relaxation will continue after the war we do not know, but we mention it as confirmation that Indian cotton is so much below the strength of American, that if India is to be self-supporting in army supplies, it is essential that the Northern and Western staples should at least be maintained as well as their standard of strength and not be allowed to die out, which is apparently the policy you have in contemplation in the demi-official under reference. We think that the Director of Army Clothing will confirm our assertion and say that the strongest cloth he obtains anywhere in India is the product of the Buckingham and Carnatic mills. In recent years, the Bombay mills have been increasingly large buyers of Northern and Western cotton and there is not the slightest doubt that they use it for warp purposes as we do, but probably use a larger proportion of cottons from their own side in their mixture.

You may suggest that we should pay a higher price for Northern and Western cotton than we do, but I submit that we are already paying a very fair relative price. For instance, we find averages on the same days—Northern costing us Rs. 245 per *khandi* in Madras, and Southern Cambodia Rs. 255 per *khandi*, Madras. Taking the average loss in weight on the Northern as eighteen per cent and the Cambodia eight per cent, the net price of the clean Northern cotton per lb. is annas 9.57 and the Southern Cambodia annas 8.87. So that you will see that the clean Northern cotton really costs the manufacturer considerably more than the Southern Cambodia although at first sight the price seems less, a point we trust you and your advisers will keep in mind when you are considering this question.

If, as I assume, you are considering only the question of production per acre and the return to the grower, I can only say that the success of your policy will be short-lived.

We maintain that we pay a higher price for Northern cotton per lb. of clean cotton than for any other staple in the Presidency and can prove it by figures, and it is for the staple despite the colour that we pay. We can buy any amount of white cottons at lower prices.

What we wish to submit to you is that ultimately it will be as unfortunate for the ryot as it will be immediately for the manufacturer if you persist in improving the colour without maintaining staple. India just now is in very urgent need of better home grown staples.

If the colour cannot be improved without prejudice to the staple, it is much better left alone and attention devoted to the marketing.

If you could induce the Northern and Western ryots to market their cotton as cleanly as we get Tinnevely, Salems or Cambodia the price of Northern and Western to-day would be Rs. 35-40 per *khandi* of 500 lbs. higher than it is and we should be glad to pay the difference.

(viii). Letter from Messrs. Gill and Company, Limited, Bombay, to Messrs. Binny and Company, Madras, dated Bombay, the 21st August 1917.

We are duly in receipt of your letter of the 18th instant on the relative value of short and long-staple cotton.

Looking to the general tendency of the Indian trade towards the production of higher counts and the almost unlimited field of enterprise offered by the East African and Persian markets, it would appear to us a suicidal policy to encourage short-stapled cotton to the exclusion of long-stapled and we are confident that an official reference to the Bombay Cotton Trade Association would elicit an identical reply.

The supplies of short-stapled cotton are almost always more than adequate to the combined need of India and Japan and their increase would in our opinion be mainly in the interests of Japan.

The surplus of good stapled cotton is usually a negligible quantity and we believe the more good stapled cotton is produced, the greater will the demand be.

We do not quite agree with paragraph 2 of your letter. Many of our local mills and certainly Japan prefer the finer staples of Surat and *Dholleras* to the harsher Western and Northern fibres but up till the present season the *Dhollera* crops have been disappointing for some years past.

This year we have had a bumper crop and excellent quality though we understand you did not care about the cotton.

We certainly anticipate an increasing demand for all good stapled cotton in this market and are entirely in accord with your contention that every effort should be made to improve staple both in the quality and quantity available.

(ix). Demi-official letter from G. A. D. Stuart, Esq., I.C.S., Director of Agriculture, Madras, to Sir Clement Simpson, Messrs. Binny and Company, Limited, Madras, No. 354-D., dated Madras, the 15th August 1917.

Thanks for the sample of Red Northern received to-day together with your report on it.

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4. Both Red Northern and White Northern are a mixture of the two species *Gossypium indicum* and *Gossypium herbaceum*. *Indicum* is red and strong, *herbaceum* is white and weaker, but still fairly strong. Red Northern contains more *indicum* than white does. As the trade have always favoured whiteness we made our first selections from *herbaceum*. The best of these is our No. 2 which we have been putting out on a large scale in recent years. It is particularly white. Buyers give no premium for extra whiteness or cleanliness. If the cotton is up to the standard of White Northern, it gets the market price. If it is below this standard, it is allowed, but if it is above the standard, it gets no extra premium. Consequently a ryot or dealer who has any of our No. 2 does not sell it as such, but mixes it with Red Northern so as to bring the colour up to the White Northern standard. The result is that there is less Red Northern brought in. If you want strength, your remedy is to pay the same price for Red Northern as for white, or even pay a better price for red (but in this case there would be danger of Coconadas being brought in to mix with the white). Whether you want strength so much that it would pay you to do this is a matter for you to decide. But so long as you give a premium for whiteness, you will get a weaker cotton on the average.

5. Our selection No. 14 is an Indian cotton, but a white variety. We are growing thirty acres of it this year and will multiply it as rapidly as possible (say fifteen fold per annum) and put it out in place of our No. 2. Its one defect is a low ginning outturn, 25 per cent, as compared with thirty per cent. for No. 2. For this reason ryots may be a little shy of growing it, but they will do so if buyers will give a small premium of Rs. 3

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or Rs. 4 a *khandi* for it as an encouragement. Owing to its strength, it should be worth more to spinners than ordinary White Northern. If it is to be multiplied rapidly, it is essential that the crop should be separately ginned and the seed returned unmixed to the growers. We can do this for the first two years, but in the third year, when the crop should be over 1,000 bales we want to help the buyers. In the south the buyers have helped the spread of *karunganni* very largely by arranging to gin specially all consignments of *kupus* brought in by ryots with a certificate of purity from us. If you owned or leased a ginery at Nandyal, you could do this. You would be certain that you were getting a pure crop and, by returning the pure seed to the ryots, you would ensure the increase of the crop each year. Failing some such action the strain will get mixed at the gineries and its progress will be slow.

I am asking the Bombay Company to help us in this way at Proddatur, Kurnool and possibly Adoni, but I will put out the strain round Nandyal first.

6. With regard to the intrusion of *pulichai* or *roseum* cotton into the Northern and Western area, you were wrong in supposing that this had been introduced by the Madras Agricultural Department or that I intended to introduce it in the near future. There is nothing in my demi-official No. 241-D., dated the 7th June 1917, to lead you to suppose this. But the point is that certain ryots round Adoni have discovered that *roseum* cotton gives a large outturn on red soils as an early (*mungari*) crop. They know that they can get the seed from Akola where the Central Provinces Department of Agriculture have a cotton farm. The views of the Central Provinces Department of Agriculture on this cotton are to be found in the Agricultural Journal of India, Special Indian Science Congress Number, 1917. I can no more prevent ryots, importing this seed and growing this cotton than I can prevent them growing indigo or groundnut in preference to cotton if they think it more profitable to do so. In the south we have been able to knock out a similar cotton, *pulichai* because—

- (1) the buying firms control the gineries and so can if they wish detect and penalise mixing by examining the seed, and
- (2) our *karunganni* selection Company No. 3 gives a better return in rupees per acre than *pulichai* does.

It is the second reason that is most important. If we had not had Company No. 3, I do not believe that the buying firms could have held out. In the north, the buying firms do not control the gineries and so cannot prevent or promptly penalise mixing. And we have not been able to evolve a heavy yielding strain of long staple from *herbaceum* or *indicum* cotton, (*karunganni* is a different species *obtusifolium*). I am trying Company No. 3 at Nandyal. If it grows well there, I will keep in reserve as a defence against *roseum*. The ryots believe that this latter cotton will not do well on black soils, and this is possibly correct seeing that the rainfall is a good bit less than in the Central Provinces. But if the ryots are wrong, and if Company No. 3 does not do well at Nandyal, then I cannot see how *roseum* can be kept out. And it may well happen that the wisest policy in the future will be to refrain from wasting energy in a hopeless struggle and to concentrate our energies in spreading *karunganni* and Cambodia in the south. After all, if we get the whole 600,000 acres of the Tinnevely District under *karunganni* which seems quite possible, and develop Cambodia widely in districts like North Arcot, we should do a good deal to improve the supplies of long-staple cotton.

(xi). Letter from Sir Clement Simpson, Messrs. Binny and Company, Limited, to G. A. D. Stuart, Esq., I.C.S., Director of Agriculture, Madras, dated Madras, the 22nd August 1917.

I am in receipt of your letter of the 15th, for which I thank you.

With regard to your paragraph No. 4, I do not think you are correct in stating that extra prices are not paid for cotton above the standard, except in so far as the price of the standard is governed by averages.

Unless there is a substantial quantity of a special quality, it is not worth while keeping separate for special use and, therefore, paying a special price. But if the average of a district is improved, the relative market price for that district will improve, or if a substantial quantity is offered of a better quality it will certainly always command a special price.

We already pay for strength, if we did not want strength we would not buy northern at all. Except for strength, we can get better value elsewhere.

No. 5.—We would not let the question of gins stand in the way of improving the strength of cotton of the district, the question of supply of good staple cotton to us is too serious.

I am glad to hear that I am wrong in supposing that you have any intention of introducing or encouraging *pulichai* or *roseum* cotton, and I hope you will be as resolute in keeping it out in the north as you have been in the south.

Sir CLEMENT SIMPSON called and examined.

5415. (President.) The deterioration in Red Northern only began last season. It has not been testing as well as it did and is becoming very mixed. A sample which came down only this morning consists of one-third Dharwar American and two-thirds Red Northern. This deterioration has been going on in Devangeri in Mysore territory for five or six years. The staple of Dharwar American is much inferior to Northern in strength though not in length. It does not give the same spinning results; we have to keep above about seventy lbs for 20s particularly for Government work. I have no theories as to where mixing takes place. We buy chiefly through our own agents at Nandyal and Tadpatri but partly through the Bombay Company. We buy very little in the local market.

5416. *Karunganni* is a new cotton and is an improvement on the old Tinnevelles. It is quite all right just at present. As to Cambodia, our mill men say that it has fallen off considerably. It is not making as nice a cloth as it used to do. We have not bought Cambodia except for special purposes in small quantities. What we bought last year was quite good for ordinary purposes but we were spinning a lot of 40s out of it formerly. I do not think that there has been any deterioration or alteration in Coconadas. They were always bad. Westerns are falling off too for the same reason as Northern, i.e., mixture.

5417. In my written evidence, I have recommended closer relationship between the trade and the Department of Agriculture. A standing committee in Madras with equal representation of the Agricultural Department and the trade might bring them into closer co-operation. My feeling is that agricultural development has not been in the direction that is most suitable to the trade requirements in the north of Madras. I am quite satisfied with the state of affairs in south of Madras. I would like the Agricultural Department to have nothing to do with *roseum*. I put staple before colour.

5418. We generally buy ginned cotton; we have only gins in one pressing factory. I know that gins up country are overrun in speed judging from the reports that I have got. There are other abuses such as mixing

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of *kapas* with lint. We reject a good deal of mixed stuff that is mixed. Our agents are not Europeans. We pay them Rs. 250 a month and free quarters. They have had training in cotton work under us and they have been with us some years. All the cotton they buy for us is examined and reported on at the mills and is compared with other purchases, for instance those from the Bombay Company.

5419. The policy I would advocate would be to concentrate on the well known old types, Northern Westerns and so on, as well as on Cambodia, and by selection and improved cultivation to get them back to the old standard. The first thing is to do the best with what you have got. I do not think that it is quite what the Agricultural Department have been doing. Nandyal No. 2 is improved White Northern. It is a selection from White Northern but it is a selection for outturn and not for improved staple. The Agricultural Department say that No. 2 is grown for staple, ginning percentage and colour and that it is the best that they have got so far. But I think that is worse than the ordinary cotton. Number 14 is a selection from White Northern, only it is too weak. Its defect is that it has a low ginning percentage. I contend that the Agricultural Department are sacrificing staple for colour. The attitude of the Agricultural Department has all along been that it is better to cultivate a white feeble cotton with a good outturn rather than to develop and improve the staple of what they have got. That is the whole implication of the correspondence that I have had with the Department.

5420. (Mr. Wadia.) We buy very little cotton in Bombay. The only good cotton that we get from Bombay itself is *Dholleras*. We like *Dholleras* better than Broach for twist. We get very poor results with Broach. The chief cottons from the Bombay Presidency that we use are the cottons from Bagalkote in the Bijapur District and from Gadag. The cotton that comes here from Gadag and Bagalkote we call *kumplas*. It is very much the same as the cotton from Devangeri in Mysore and from Hubli. We use Hubli *kumplas* as well. As a matter of fact we have closed up buying at Gadag and Bagalkote; the rail charges were so heavy and the cotton has fallen off. There has been a marked deterioration in *kumplas* as well as in Westerns in spinning tests though not in colour. We care very little about colour and do not buy on it. We do not buy any saw-ginned Dharwar. I do not think we have bought any Surtee cotton, so called, but I am not familiar with those Bombay cottons.

5421. The whole point that I am making is that all over India, especially in this Presidency, cotton is deteriorating both in quality and in staple. I think this is due to inferior types being grown in the districts from cotton brought in from Berar. I do not see how this can be stopped except by combination and such assistance as the Agricultural Department is prepared to give. If the Agricultural Department cannot prevent the cultivators from bringing in seed, I am afraid I have no remedy to suggest except combination on the part of the buyers. I cannot suggest any local remedy. At present there is a world's shortage of cotton, both short staple and long staple. Anything that can be got will be purchased and the buyers are not likely to use the remedy that they have and to combine in present circumstances. I would suggest that the Agricultural Department should, where possible, put out pure types of seed and encourage the cultivators to grow them and that the Department should control the distribution of seed by persuasion and by multiplication on seed farms. I think everything should be done in that direction possible. I would not preclude a man buying what seed he wanted. If the Agricultural Department gave out improved types of seed at a reasonable rate, it would help matters. I think they ought to do that. I do not like immediate control. The Agricultural Department would want a big staff if good seed is to be made available for all growers and I should be prepared to recommend a large increase of staff right through. It should be the policy to benefit the cultivators in the greatest measure and hence the policy of pushing short staple, that gives a better ginning percentage and bigger yield, is wrong; such cotton may, for the present, pay the cultivator but eventually it will not. I do not know how I can explain matters more clearly than by saying that the production of the best is always the best policy. I do not think that there should be legislation against the cultivator. What I propose is that the Agricultural Department should evolve some type of cotton by seed selection which will pay the cultivator just as well as the short staple and will at the same time be more useful to the manufacturer.

5422. I think that buyers do pay a very considerable premium for long staple cotton. Take for instance the difference between Guntur cotton and Cambodia. It is now Rs. 50 per *khandi* of 500 lbs of lint. The price of *roseum* should be Rs. 150 less than that of Cambodia but I do not know what it actually is. We do not buy short staple cotton. If short staple cotton is mixed with a better staple cotton, it obviously fetches a higher price. The intrinsic value of *roseum* to me as a buyer is on present values at least four annas per pound less than that of our good indigenous cottons.

5423. I cannot think of any practical suggestions to stop mixing. I would not suggest the prohibition of the transport by rail of cotton except to a mill or to a port such as Bombay and Madras. I think that the grower and the ginners have as much right to mix the cotton as the mill owner and as much right to water it. You have no right to legislate against one man and not against another. Legislate right away through if you like but I do not think it is right to legislate against the ryot and the broker to protect the merchants who are quite capable of taking care of themselves. You must legislate all the way along. You cannot legislate against the ryot and leave the manufacturer free when he also mixes short staple cotton with long staple cotton deliberately. I am not in favour of legislation against one class: I can only suggest that Government should help in the distribution of seed and try to find out strains of cotton that will pay the ryot and give better results. It is only during the last few years that all this trouble has come about, apparently through the Agricultural Department trying to help these short staple cottons. I cannot think of any scheme—even legislation—by which it could be stopped. I do not know that mixing is the cause of the deterioration of the quality of cotton right through India. One must get to the root cause of the matter before suggesting that. I do not think that any prohibition should be enforced in regards to the transport of cotton. That would affect the freedom of trade. The manufacturers also impose on other people.

5424. We have been buying Northern cotton long before I came to India—certainly ever since—and the type remained constant right up till the last few years. It is only during the last few years that the Agricultural Department has opened a farm at Nandyal and has made experiments with other varieties and has, I suppose, drawn the attention of the ryot to the bigger outturn of certain strains. The fair inference is that, as a result, the ryots are now casting about for cottons with bigger outturns and I think they are finding them. To my knowledge, the Agricultural Department has not given out the seed of any short staple cotton. I think it obviously ought to be the policy to cater for a large and increasing local market in preference to an export market. The long staple cotton must certainly go up in time. The trade has got to bring about a difference in price between long and short staple cotton.

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5425. I think that something on the lines of the Victoria Institute in Bombay should ultimately be started in Madras but a start should be made a bit lower down by taking and educating the people that are working in factories and workshops. I am not prepared to express an opinion in regard to agricultural education.

5426. I should have no objection to a cess being levied to meet the increased expenditure on the Agricultural Department for the improvement of cotton cultivation. I would make the cess a general one. If all are going to benefit, all should pay. I do not think the difficulty in collection would be insuperable. It would have to be collected at the presses or the mills. What is neither used in the mills nor exported is not worth troubling about and it would not matter much if it were left out. I do not see any way of collecting the cess on cotton, neither manufactured nor exported. The simplest thing would be to add the cess to the excise and to levy it on exports. It would have to be collected on the yarn returns too. We should be quite willing to pay such a cess, if levied. There is no excise on yarn. I think a cess would be feasible but whether all manufacturers would agree to it, I am not in a position to say. I think the bulk of the manufacturers in India would be willing.

5427. (Mr. Hodgkinson.) I am in favour of the Agricultural Department being increased in order to increase the supply of cotton generally. It is difficult to establish cotton markets; there is no cotton market in Madras. There is less market here this year than there has been previously. There was something like a market fifteen or twenty years ago. I have no objection to the establishment of markets on the Central Provinces lines if it is feasible.

5428. As to the deterioration in Red Northern, I am in favour of the improvement of the strength of staple rather than of colour but I lay very much stress on grade and cleanliness. The blow room loss of the sample now shown me (No. 14 Nandyal) would only be seven per cent as against ten to twenty for the ordinary Nandyal cotton or an average of about fifteen to sixteen. If the cotton in the north of Madras could be picked as well as the cotton in the south, it would add enormously to its value.

5429. In Guntur and other places, there is a certain amount of forward buying by the mills and the form of contract is that the cotton should be the average cotton of the season. It is rather a vague sort of contract. We do not buy on type but on the average quality of the season. That is the custom here. I certainly think that it would be an improvement if everything were bought on type. I do not think that cotton is more adulterated now than it used to be but the staple is falling off. I do not think that the establishment of a futures market would stop cotton being bought forward. In normal times, one can cover in Liverpool but a satisfactory futures market could hardly be established in Bombay in these abnormal times. Such a market would tend to increase speculation very much. I think Liverpool meets our needs under normal conditions and I do not see how anything could be done for the present abnormal conditions.

5430. We have made experiments with saw gins in Madras but have no very great experience of them.

5431. (Mr. Roberts.) The staple of Red Northern is under an inch. I should say that it is 7-8ths to 15-16ths of an inch. If you cannot get enough of extra long staple cotton to market it, it is better to go on with the shorter. There is very great difficulty in keeping it separate and some sort of arrangement has to be made to make it worth while for anybody to buy it. I do not know how the difficulty can be solved. It is not worth while buying a hundred bales of long staple cotton. We cannot do anything with it. It ought to be shipped to Liverpool or to some other big market. It should be disposed of by some central bureau or some agency of that sort in Bombay. I do not think that the problem can be solved in each district by itself.

5432. The price of Northern and Western cottons suffers by about ten per cent. owing to the heavy blow room waste. That is one of the reasons why these cottons are not getting their full value as compared with Cambodia. The Northern cotton in my opinion is worth more than Cambodia if it could be marketed as well as Cambodia but, at present, we are paying very considerably less—fully ten per cent. I do not quite agree that the present system of buying forward directly discourages the cultivator from delivering clean cotton. Until this season we have never bought cotton for longer periods than sixty days ahead. The reason for buying forward is that there is such a great demand for good staple cotton going on. We are buying now at prices which may be lower than they will be at the time of delivery but it sometimes happens the other way. That being the case it does not always happen that the man who has to tender against a contract will give as a low quality as possible. Naturally everybody would buy forward if they made money every time.

5433. It is very seldom people pay a premium for extra good quality. It is very desirable that they should. We pay a premium at Tiruppur of one per cent. if the cotton is ginned at our own factory. That works out just now at Rs. 4 per *khandi*.

5434. We do buy Coconadas sometimes but are not doing so just now. I should not say that it is a more profitable cotton than Northern or Western. We only buy it for specific purposes for lower counts or for something we are going to dye or bleach. I think the staple might be improved by attention but I have not got any intimate knowledge of it.

5435. (President.) We make separate contracts for Red and White Northern. We are paying the same for both just now but usually the white commands the higher price. The red is stronger in staple but the white has a very much better colour. We should be quite willing to establish a ginners at Nandyal if that would help the Agricultural Department but we could not do so until the war is over.

Supplementary written statement submitted by Sir Clement Simpson.

5436. *General policy.*—The general policy to be pursued, in my opinion, after reading the evidence before your committee as reported, is very simple.

(1) First, that, in each Province, systematic efforts should be made to improve the marketing, that is to say, the picking, the ginning and the pressing all over the Province.

(2) Secondly, close scientific agricultural attention to the improvement of the output per acre and the length and strength of staple of the worst cotton in each district and effort concentrated to bring the worst up to the average. For instance, in this Presidency, our worst staple north of Madras is Coconadas associated with Guntur District. It was an error of judgment to start "improving" with the best staple cotton in Southern India namely Northern, instead of with the worst staple, Coconadas. The correct policy has been followed south of Madras, where excellent work has been done and a general levelling up has taken place. By beginning with the worst instead of with the best you are steadily reducing the risk of the removal of inferior cottons to districts where superior cottons are grown and consequent undesirable mixing.

5437. *Establishment of a future market.*—I have no objection to a future market in Bombay, if one is needed. For our needs for forward cover Liverpool fully suffices, and I apprehend that a market in Bombay would tend to increase speculation. Manufacturers in India, particularly those not in Bombay, must hold the

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"actual" for many months in the year whatever happens, or cotton for their needs would pass out of India through the export houses. The cottons we want can be easily cornered and the future cover rendered useless. I cannot see that a future market would restrict forward contracts. There are so many different types of cotton and distances and charges are so great, that it would be most expensive if the "actual" had to be selected in Bombay. To make myself quite clear, I would cite a mill situated at a distance from Bombay and from the sea-board say at Coimbatore or Madura. Such a mill might cover forward sales by buying future in Bombay. Mills at Coimbatore and Madura look primarily for supplies to cottons grown at their doors, if they neglect to buy such supplies forward relying on a future fixture, there is nothing to prevent the export houses, their competitors, buying the "actual." In these circumstances, the mill at Coimbatore or Madura would have to seek the "actual" in Bombay. For such, their future cover might be of very little use as the mixings would be all upset as also the standards of yarn or cloth.

(2) The establishment of a future market in Bombay is calculated to increase further the manipulative operations of the foreign exporters and increase their influence on the cotton markets of India.

(3) Certain exporters in their evidence before you, deplored forward contracts whilst they are themselves the most consistent offenders, not only in making forward contracts and corners, but in making demoralising cash advances. A system of monthly settlement of differences on contracts might be useful, but a very little combination on the part of buyers or Chambers of Commerce would bring this about, a Central Cotton Bureau at Bombay is scarcely required for the purpose.

5438. *Effect of inferior cotton on labour supply.*—If I may offer one more remark, I would like to say that I agree with the very valuable evidence given by Mr. Halliwell, as I read it, viz., that much of the labour trouble and discontent in Indian factories is due to the inferior cotton supplied and to the labour being called on to perform the impossible task of making inferior cotton spin superior counts.

(2) I have been connected with cotton manufacture in India for over thirty years and my experience is that every attempt to cheapen costs by lowering the class of cotton used for a particular purpose has had disastrous effects on the supply of labour, the output of the mill and the contentment of the workpeople.

5439. *The question of legislation.*—If recommendations for legislation should be contemplated by the Committee, I would once more urge that they should be thoroughly through and through, not directed against the ryot alone, but equally against the manufacturer who forces on his work people a cotton below the standard for which it is suitable, who waters his yarn, puts clay in his size and Epsom salts in his cloth. The ryot deceives no competent manufacturer or buyer while the manufacturer may impose inferior wares on a untrained and innocent public.

(2) The only legislation I consider desirable is that the name of the press should be distinctly marked on each bale with the press serial number and a register kept of the name of the person for whom each bale is pressed, this solely to assist in the tracing of deliberate fraud.

COMMITTEE OF EUROPEAN OFFICERS OF THE BUCKINGHAM AND CARNATIC MILLS, Madras.

EXAMINED AT MADRAS, MARCH 4TH, 1918.

Written statement.

IV.—MANUFACTURE.

(a) Ginning and pressing.

5440. (38) *Saw gins versus roller gins.*—The chief merit of the saw gin is that of a large production as a sixty saw gin will produce in ten hours 5,000 lbs. of lint. This large production results in a low ginning cost.

(2) The merits of the roller gin are :—

(1) Easier ginning, i.e., less damage to the staple.

(2) The roller gin does not lend itself to high speeds as does the saw gin.

(3) There may be more carelessness in looking after the roller gin yet the same damage will not be done to the fibre, as would be in the case of the saw gin. A double roller gin will produce about 1,200 lbs. per day. Thus the cost of ginning by this type of gin is somewhat higher.

5441. (39) *Effect of saw gins on Indian cotton.*—We could not say if saw gins have been successful with Indian cottons generally, as we have only seen one at work in our mills and that was condemned for damaging the staple although no spinning tests were taken of the fibre after ginning. The general opinion even by American experts seems to be that a certain amount of damage results from using the saw gin. The tendency seems to be to run these gins at too high a speed so as to reduce the ginning charges. Certainly the action of a saw gin is much more brutal than the roller gin during the operation of detaching the fibres. If the saw gin is not very carefully adjusted and attended to in the setting, much nep is made and the fibre can also be bruised or damaged, thus weakening the resultant yarn. We would not under any circumstances advocate the use of the saw gin in this country as the labour is not to be relied upon.

(2) We advocate a full time practical man being engaged to visit ginning factories and advise adjustments, repairs, speeds and general efficiency of machines to attain the best results at the cost of the Agricultural or Industrial Department.

5442. (42) *Effect on machinery of replacement of short staple cotton by long staple.*—This all depends on the definition of long and short. We should have to make some considerable changes if we jumped from coarse as at present to *real fine spinning*, but not for 30s. from indigenous long stapled cotton. The proportion of our machinery for *real fine spinning* (over 40s.) would be all wrong. We should have too much of one and too little of another. Then, on most machines set out for fine spinning, some details in each machine certainly exist which are very different to what we find on coarse machinery although in the main the features are similar. We could spin finer certainly on existing machines than we do, possibly as fine as we shall ever want to go in this country, but we are not set out for any great changes and would not suggest them.

(2) We would, however, point out that the proportions of the machinery will vary to a certain extent below 40s. Take a mill, similar to our own, set out to spin average 16s, if we get down to average 10s we should

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get some spinning spindles stopped for rovings. So, in the question referred to, if we had to change from average 16s to average 30s, we should keep all spinning spindles at work, but a certain proportion of opening and preparing machinery would stand idle owing to the lessened requirements of the spinning and owing to using a better cotton which the higher counts demand.

5443. *The general question of long versus short staple cotton.*—As regards long and short staples, this is a question which can be argued from different standpoints, but to our mind the real point is—"Do we require the long exotic staple?" Taking the trade as a whole in this country, we should say that fully 95 per cent. of the power looms are engaged in making cloth and using a range of counts from 14s to 40s in warp and weft and we further think that our present cottons are quite good enough for this purpose and the machinery has been set out to spin this range of counts. Moreover the people of the country with small exceptions require as cheap a cloth as is possible to produce, as wages are comparatively low. Then if we want to cater for the needs of the country we must make a cloth that will command a ready sale. Such a cloth is being made at present and the manufacture is a profitable one, and this is being done from cotton grown at present in the country and we don't see any reason for a change to an imported long stapled variety. We think the constant call for long exotic staple does not come from the Indian manufacturers and we class it from an outside source. We think that there would be much more benefit in trying to improve the existing cotton in quality, giving us a cotton which is cleaner, more regular in staple, stronger and generally more reliable than we get at present. We further think that this is no country for growing real fine stapled cotton, the climatic conditions appear to be against it and the labour is anything but what it should be. A good exotic cotton in this country does not appear to retain its character for any length of time, as we might quote in the case of Cambodia. The trickery in mixing and pure neglect which has taken place since this cotton was introduced have brought this cotton down to a level with the ordinary indigenous cottons. The only new type of cotton we have had to deal with has been Cambodia, and we have used and still use a considerable amount. When first introduced and for several years, this type was very good and we spun a good 30s warp and a 40s weft from it, and we have no hesitation in saying the yarn would compare favourably with any spun from American cotton. We had no difficulty with it in any respect from the bale to the finished cloth and the yarn was favourably commented upon in Manchester. But it began to deteriorate and is still doing so, the length of staple has decreased, also the strength to a certain extent. It still maintains its beautiful colour, but it is difficult to obtain, if at all, any Cambodia equal to the cotton as first introduced. What are the reasons for the deterioration? We should say that the seed selection has not been carried out in a proper manner and this and neglect in cultivation have been the two main factors in its downfall. It is a great pity that it has not maintained its early promise. Such would be the fate of any other long stapled exotic cotton introduced in this country. This is one reason why we are dead against them.

(2) In further answer to this question, we mention that more benefit would be derived if energy was directed to improving the existing indigenous cottons, instead of attempting to grow exotic cotton from imported seed. We append a list of our most useful cottons with tests :—

Name of Cotton.	Blow Room loss.	Test for 19s Twist.
	Per cent.	Lbs.
Red Northons	15.41	820.2
Good Westerns	16.22	76.80
Southern Cambodia, Exotic Cotton	6.80	75.87
Good Northons	15.00	75.60
Bagalkot (Bijapur District)	18.50	73.25
Devangeri (Mysore)	15.00	67.20
Ginned Coconada	17.27	66.62

To this list may be added *Tinnies, Karunganni, Trichy, Salems*, all of which are useful cottons.

(3) It would be a very serious mistake if the above mentioned cottons were allowed to decrease in cultivation by the substitution of shorter and whiter stapled varieties. In our tests this season, we find evidence of some other shorter stapled, weaker, but better coloured cotton, which has reduced our tests in strength. On enquiry, we find this variety is being planted in preference to our usual cottons, on account of its higher yield per acre. What will become of the mills who have built up their trade and wholly depend on these cottons? There are no other cottons grown in India in any quantity that could be used in their place and give us the same results. If the mills in question have to use this shorter staple, it may mean weaving for a different market altogether as the shorter and weaker varieties cannot be woven into cloth that will give us the necessary strength we require. Even if some could be used, it would mean a big reduction in the speeds of preparing spinning and weaving machinery with the corresponding increase in cost of production and this would mean a higher priced cloth. Then this reduction in speed which would be absolutely necessary would give competitors a chance they would not be slow to avail themselves of. It would also be giving help to Japan and the Continental countries who require this short staple. All this would be to the detriment of the Indian mill-owner who has sunk a large amount of capital in plant specially adapted to use these strong cottons. These indigenous cottons are the cottons we would suggest that Government and the Agricultural Department improve by all the means in their power, and by doing so would benefit the trade of the Indian mills and the country.

(b) Spinning and weaving.

5444. (43) *Counts spun and market for yarn or cloth.*—Our range of counts is from 8s to 30s in warp and weft. Our chief markets are India and Burma.

5445. (44) *Condition of cotton.*—So far as the packing of the bales is concerned, we have no complaint to make as they are very good especially when compared with American packing. We have, however, a complaint

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to make and a very serious one regarding the way the cotton is marketed, for there is no doubt adulteration of the cotton is very common. Seedy bales are very common with a great loss to the spinner, too common to be accidental. Another serious matter is the leaf which is present in most cotton to a serious extent and no doubt the bulk of it could be avoided. Once the leaf gets in the cotton, no amount of opening or carding can get rid of it and the finished yarn or cloth is depreciated in value. Sand and mineral matter are also present to a great extent all of which is a great loss to the spinner. As an illustration, we may say that in different cotton we use, we have had a range of loss in blow room varying from 4.5 per cent. to 22.9 per cent, add on to this another six or seven per cent. for the carding and spinning processes and the loss on some cottons becomes appalling. There is no doubt also that cottons are mixed, as quite a lot of variation exist in the length of staple even in the same lot, or even bale, in many instances. There appears to be no standard, or system of grading and the amount of stained and immature fibres present is certainly very great. All these points have their due effect on the spinning as the strength is a constantly varying factor and a difference of from ten to twenty per cent. is often met with in cotton from the same district and from the same press. This season, just to show what difference can be found in the cotton from the same press, we tested two samples and one sample lost over 100 per cent. more in blow room than the other sample.

5446. (45) Effect on cotton market of replacement of short staple cotton by long staple.—The change referred to could only come about in a very gradual manner if at all possible. So the effect on the market will be extended over a long period and not much effect would be felt. The gradual replacing however of short staple by long would eventually compel spinners to buy a better class of cotton, this would cost more, the cost of production would also be more if finer counts were spun, or if not, then producing the same counts from a better cotton the resultant cloth would be higher in price, and unless wages improved in this country then the cloth would be further out of the reach of the native. Possibly he would have to buy the cloth, but he would not buy as much. There will always be required in this country a great quantity of cheap cotton cloths such as are produced as at present and if they are not made in the country, then Japan or some other country will make them. Prior to the war, Germany made a lot of cheap cotton cloths for the Indian market and Japan is now doing the same. We maintain these should be made in the country; there must be money in the trade. The wants of this country are chiefly cheap to medium cotton cloths and these are being made now but not in sufficient quantities for the country's requirement. So why introduce exotic "long staple," if it is not required, when the needs of the country are being supplied by the mills of the country. With a surplus, then would be the time for making a change, but there is work for more mills on the same class of goods as is being made at present. Then again the labour of the country is not favourable (from the standpoint of quality) to making fine yarn and cloths; in the future, this may come about, but introduced at present Lancashire would kill the trade by competition. Indian mills on coarse counts are holding their own, let them stick to it.

Mr. A. ALEXANDER, Spinning Master, Mr. G. A. HARGREAVES, Spinning Master, Mr. J. T. BANTON, Carders, Representatives of a Committee of European Officers of the Buckingham and Carnatic mills, called and examined.

5447. (Mr. Hodgkinson.) Mr. Alexander.—I have had experience of spinning in Oldham, Manchester since I was a boy. We used American cotton there. I have no experience of Indian cotton at home nor has Mr. Hargreaves or Mr. Banton. I do not suppose Lancashire would buy Indian cotton at the present time if it could get any cotton from elsewhere. In Lancashire, they prefer to use the waste from the fine cotton for their coarse counts. There is a certain amount of waste imported from America and that is possibly used for the same purpose. So it amounts to this that the Indian cotton at home is in competition with American waste. If the Indian cotton is to be used at home, it would have to be marketed in a cleaner condition and more care would have to be given to it, otherwise it would not command a regular price. They do not go in for it at home because they cannot rely on it to the extent that they would like.

5448. The cotton shown us from the Government Farm at Nandyal, No. 14, is not a bad cotton. It is pretty strong and it is very clean but is only seven-eighths inch in staple. This cotton would be very useful at home for anything up to 40s. We do not get cotton like that here.

5449. There is a great deal of room for improvement in picking and ginning. In the first place, the gins want attending to very much; they spoil a lot of cotton in different ways. Secondly, attention should be directed towards the prevention of the mixing of seeds in the gins; and thirdly, to keeping the length of staple more regular by preventing the mixing of seeds in other places. Gins are run at a greater speed than they should be, unless there are people competent to deal with them. That is to say some one with really practical knowledge is wanted to advise exactly at what speed the gins should run. It is not possible to lay down hard and fast rules as to the speed of the gin. It all depends on the condition, quality and age of the machine. The ginners are paid by weight irrespective of quality.

5450. To get clean cotton there will, I think, have to be a governing body outside. Certain places must be condemned if they do not keep up their cotton to a certain purity. For that, there would have to be some system of licensing. I would not like to go so far as to boycott such places but I would let them know that their stuff could not command the same prices as that from other places. Some of them put water in their *kapas* and that gives trouble.

5451. We are not in favour of using saw gins for any cotton in this country. I have brought a few samples of Cambodia cotton both saw ginned and roller ginned for purposes of comparison. The Committee will be able to see that the roller ginned is the better of the two. The saw ginned sample is dirtier than the roller ginned. There are mostly notes in the saw ginned and it is very difficult to get them out. The blow room loss, i.e., the loss up to the scatcher for saw ginned cotton is 10.9. That for roller ginned is 7.9. The loss in carding is 7.1 for the saw ginned and 6.4 for the roller ginned. A great amount of short fibre is taken out from the saw ginned cotton by the comb. The loss in the saw ginned cotton comes to 18.5 per cent. as against 14.3 per cent. with the roller ginned. The total loss for saw ginned cotton therefore works out at 36.5 as against 29.3 for roller ginned. The difference is seven per cent. In regard to testing, the saw ginned sample for 18s answers to a test of 92 lbs. whilst the roller ginned answers to a test of 95 lbs. for 18s. We made these tests for the Bombay Company. We are not in favour of saw gins for any cotton.

5452. Mr. Hargreaves.—All the American experts seem to be in favour of roller gins.

5453. (Mr. Wadia).—There is no doubt that the roller gin separates the fibre from the seed better with much less damage to the staple than in the saw gin. There is no difference in the quality of the cotton whether it is ginned in the single roller gin or in the double roller gin; the action is practically the same in both cases

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In the roller gins, there is an easy shearing action; in the saw gin, there is a tearing action which cannot help but damage the fibre. As to why double roller gins are used in preference to single roller gins, I can only say that it is merely a matter of preference. There are no single roller gins in Madras. All our experience is with double roller gins.

5454. Mr. Alexander.—I have been 26 years in India, Mr. Hargreaves has been eight years and Mr. Banton has been three years. I do not think that the cotton has really deteriorated much in staple but on the other hand it has not improved. We have kept figures of tests of the losses in cotton more or less for twenty years past. With the exception of that little difference brought about by taking more dirt out of one kind than another, I do not think there has been really any large difference in staple during the last twenty years or so. I do not think there has been any deterioration in staple at all in Northern and Westerns, they are as good as they were twenty years ago.

5455. Mr. Banton.—The cotton comes in in varied lots. As regards cleanliness, we get a difference of as much as hundred per cent. in the amount of dirt in the cotton from the same press in the same district. The range of variation is from $\frac{1}{2}$ to 23 per cent. There is no doubt that a great amount of this loss could be avoided.

5456. Mr. Hargreaves.—From my eight years' experience, I do not think that there is much difference in the indigenous cotton. Since its introduction, Cambodia has deteriorated. It is now much shorter in staple and not so clean or so strong as it used to be.

5457. Mr. Alexander.—I should say that in the gins upcountry, the cotton is to a certain extent mixed wilfully but that the dirtiness is more due to neglect and carelessness and indifferent labour. We find scores of instances in which good big bundles of fly sand, etc., are put into the cotton. We never sell any waste from our mill for fear that it will get back to the presses and will be put back again into the cotton. We use it as far as possible and that we cannot use we burn. We have a waste plant. There is a market for what we burn.

5458. One of the troubles that we have to contend against is the irregularity of staple. Change in the climatic condition seems to have effect on staple even when there is no mixing. One man may go in for better seed selection and so he produces a better quality of cotton; another does nothing of the kind; he simply puts in any kind of seed and so gets an indifferent crop. I think good or bad cultivation can make a difference of as much as one eighth of an inch in staple. I do not think that the difference in staple is altogether due to the ginners importing cotton from short staple districts, though possibly there may be something in that. I think the chief reason is that the standard of cultivation varies so much between the different ryots.

5459. Mr. Banton.—I think that, in some cases, short staple cotton is wilfully put in. We find great variation in tests. We find some evidence of short staple cotton of inferior colour being mixed with Northern and Westerns as well. That has only been the case recently.

5460. Mr. Hargreaves.—I believe the short staple variety is extending in preference to the ordinary cottons because it gives a greater yield per acre. The mixing is wilfully done. If a man brings cotton from the Khandesh District and mixes it with Westerns, he ought to be prosecuted. If transport by rail of *kapas* were prohibited, then that might do you some good. There is no doubt, I think that mixing takes place. We have found a great deal of short staple fibre in long staple cotton this last year. To stop mixing, I consider that the licensing of ginners is necessary. I should say that reduced prices should be given for mixed cotton and that this would compel the ginners to come up to the standard. I should like inspection by the Department of Agriculture or by the Department of Industries. I have been round several of the ginning factories at Sattur, Coimbatore, Tirupur, Palladam and other places and I was struck by the ramshackle way in which the gins were kept. The ginning was very bad indeed, in most cases, and on enquiry, no regular system for renewal or overhauling was carried out, only when absolutely necessary.

5461. Mr. Alexander.—Compulsion is wanted to secure that things are properly done. What is wanted is an experienced gin fitter in each factory. The Bombay Company's factories are very much better than others.

5462. Our people are prepared to pay a better price for all their cotton provided there is an improvement in the ways we have mentioned.

5463. I understand that the Bombay Company want to introduce openers in their ginning factories which would reduce the loss in the cotton by ten per cent.

5464. I am strongly of opinion that we ought to improve the indigenous cottons instead of going in for exotics. We have made many attempts to spin finer counts but have had to fall back. At the present time, we are spinning finer counts on the whole. In normal times we are spinning at least five counts higher than we used to do 25 years ago.

5465. Mr. Hargreaves.—We find that the indigenous cottons have not altered practically for thirty years. But as regards the exotic cotton Cambodia, it has already deteriorated; we cannot depend upon it. We used to make 30s warp and 40s weft. It answered to a test of 55 to 60 pounds for 30s and to one of 30 pounds for 40s. That was seven years ago. We kept this up for some time and the test of the 30s warp gradually fell to 45 pounds and so we dropped it. We found out that making fine goods did not pay us as well as coarse goods. If more attention were paid to the cultivation and seed selection of indigenous cottons, that would be more to the benefit of India generally. We want long staple cotton carefully selected and carefully marketed. Otherwise the short staple cotton will replace the long staple and the industry of the country will be jeopardised. We could not possibly make the strong drill required by the Government to-day out of the short staple cottons of Northern India.

5466. Mr. Alexander.—We do find leaf in cotton and it is one of our greatest troubles. It is very difficult to get it out. It is due to bad picking. I would suggest very careful picking but I am told there is not enough labour in the districts. We find Westerns particularly dirty. I understand that the plant is allowed to wither and that the cotton is picked up from the ground. We can deal with seed in cotton but can do very little with leaf. Attempts should not be made to replace the present cottons but to improve them. Our objection to the introduction of American is that we could not expect the same results from American cotton grown in this country as from the cotton grown in India. There would be the same trouble as with Cambodia.

5467. There have been great developments in Indian labour since I first came here. One could not then get a machine oiled properly. The people are being taught. We find also that it is a great benefit to keep men on the premises to keep the machines set. Indian labour could handle fine yarns in time but they would want years of teaching. Things are moving in the right direction but it will take some time before the class of people who work in the mills will be able to handle fine yarns, that is 50s counts.

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5468. *Mr. Hargreaves.*—It will be another fifty years before we can turn out 60s yarn to compete with Lancashire. Out here the labourer is not conscientious; he does not care how much waste he makes. At home it is wholly different; the worker knows that if he loses his job it will be some time before he gets another. But out here it is not so. If a man loses his job, he will go on to the next mill where he is sure of another and as long as that continues, I do not think that the quality of the work will improve to any great extent. In my opinion there is no chance of any direct competition with Lancashire in the finer counts, i.e., in counts over 50s. The machinery would have to be altered for one thing. If we imported American cotton for finer counts or used Egyptian cotton for 60s to 80s twist, we should have to make alterations in the machinery. I have known of cases where they tried to spin 100s out of Egyptian cotton and they had to get special rollers and all sorts of things. A great deal of money was spent but it was of no use.

5469. (*Mr. Roberts.*) We are now buying Cambodia from the same place we started, i.e., Tiruppur. Cambodia has deteriorated in the tract in which it was originally grown. I think that is due to seed selection not being carried out and also to the cotton being allowed to be grown on land which was not suitable for it. It is being grown as a dry crop instead of as a garden crop. It will never be a success as a dry crop. There is no other cotton that it could be mixed with without deterioration except perhaps Tinnevelles. Tinnevelles are the same in colour but we find a difference in the strength and testing characters. We prefer them to Cambodia. We would very much like Cambodia to be improved or kept up to some standard. It is a cotton that we advocate special measures being taken to keep up. There is more variation as regards the length of staple in Cambodia than there used to be.

5470. If you take two cottons, one saw ginned and one roller ginned, you would find that the roller ginned cotton would be better in grade and class than the saw ginned.

5471. *Mr. Banton.*—The saw gin is supposed to take more dirt out of the cotton but we do not find it so. We find more dirt in the saw ginned cotton and on the other hand there is more short fibre and more nap—three or four per cent. more. We used the ordinary saw ginned for our tests. The saw gin was ten inches in diameter and the speed was 400 revolutions per minute. For the roller gin the beater speed was 850 and the roller speed 70.

ANNEXURE.

Report on tests of yarn carried out for the Indian Cotton Committee.

(I) The Carnatic Mill Company, Limited.

N.B.—These yarns are not from combed cotton.

Cotton.		Blow room loss.	Test perlea.
		Per cent.	lbs.
Red Northern	19 ³ / ₄ Hank roving	15.7	93
Karunganni		9.2	83
Cambodia		5.8	82
Broach		8.5	57
White Northern		15.	82
Coconada		14.9	73
Westerns		21.1	81

Turns per inch in above samples 18. All the samples spun under the same conditions.

Cotton.		Blow room loss.	Test perlea.
		Per cent.	lbs.
Red Northern	40 ⁵ / ₆ Hank roving	15.7	37
Karunganni		9.2	35
Cambodia		5.8	34.25
Broach		8.5	10
White Northern		15.	34
Coconada		14.9	23
Westerns		21.1	31

Turns per inch in above samples 27¹/₂. All the samples spun under the same conditions.

Tests carried out on December 8th, 1917.

Note.—The Cambodia is also a selected bale as the average test for this cotton during the Season 1917 was about 75 lbs.
Note.—The Red Northern were from a selected bale being better than the average to show the possibilities of this cotton.

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(II) The Buckingham Mill Company, Limited.

N.B.—The yarn in each case was spun from combed cotton, 19s from 3¹/₂ hank roving 40s from 4¹/₂ hank roving.

Cotton.	19s average Counts.	Test perlea.	40s average Counts.	Test perlea.
		lbs.		lbs.
Red Northern	18.95	113	49.97	42
Karunganni	18.68	99	39.62	41
Cambodia	18.81	95	39.95	38
White Northern	19.23	84	39.5	34
Westerns	18.89	91	40.52	34

Tests carried out on December 5th, 1917.

Mr. W. R. H. WAIT, Assistant, Bombay Co., Madras.

EXAMINED AT MADRAS, MARCH 5TH, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

5472. (1 and 10) *Experience.*—I have been stationed in the Bellary District for twelve years, with supervision of agencies in the Anantapur, Kurnool, Cuddapah and Raichur (Hyderabad) Districts and have been in touch with actual cotton cultivators.

5473. (2 and 11) *Varieties.*—Short stapled cottons have not as a rule been grown in these districts, but recently the *roseum* variety has been introduced. Cotton is grown on two different classes of soil. That grown on black soils, is generally known as a *hingari* crop, while that grown on the lighter soils is known as *mungari* and is sown earlier than *hingari*. It is on this latter class of soil *roseum* is being tried. It is supposed not to be suited for black soils.

5474. (3 and 12) *Size of holdings.*—The average size of holdings may be taken as about sixty acres. On black soils, about half of each holding would be under cotton each year, while on higher soils only one-third would be sown with cotton.

5475. (4 and 13) *Yields and profits and comparative returns.*—The average yield is about 312 lbs. of *kapas* on black soils and 750 lbs. on red soils. Cotton is frequently grown on red soils as a mixed crop with *korra*; one row of cotton being sown to two of *korra*. The yield of *kapas* in such cases is about 200 lbs. per acre. The ginning outturn of *kapas* grown on red soils is generally higher than that sown on black soils and therefore commands a higher price. Taking the prices of *kapas* at Rs. 50 and 56 respectively, the profits per acre would be as follows:—

	Hingari.			Mungari.		
	Rs.	a.	p.	Rs.	a.	p.
Value of <i>kapas</i> per acre	50	0	0	134	9	10
Cost of cultivation, harvesting and carting to market.	15	8	0	27	0	0
	34	8	0	107	9	10

5476. (5 and 14) *Rotations and manures.*—The usual rotations are cotton and *chulam* (*juar*) or *cumbu* (*bajra*) alternately on black soils, while on lighter soils cotton is sown one year, followed by *chulam*, *cumbu* or *korra* the second and groundnuts the third.

(2) Red soils are generally manured every year, while black soils are only manured about once in five years. Cattle manure is the only kind generally used. This is invariably stored in open pits round the village, exposed to the weather and consequently loses many of its most valuable properties.

5477. (7 and 15) *Conditions affecting increase in area.*—If the results obtained from *roseum* at all approximate to those claimed for it, there will probably be a considerable increase in its growth. This increase will, however, be mostly on *mungari* lands, which only form a small proportion of the total under cotton. *Mungari* cottons are generally very liable to stain owing to climatic conditions.

5478. (8 and 18) *Uses of seed and seed selection.*—There is a very keen demand for cotton seed from these districts for Coimbatore and Salem and the bulk is, therefore, sold. Most ryots keep a certain proportion of their crop to be hand-ginned for sowing. This seed is generally taken from the healthiest-looking field or part of a field; otherwise there is no special selection. Seed bought for sowing purposes always fetches a higher price, if hand-ginned.

(c) Exotic cotton.

5479. *General.*—I have no experience of exotic cottons, except for a little Cambodia, which has invariably been tried under absolutely wrong conditions and has consequently been of poor quality and has rapidly deteriorated. A certain amount of what is known as American-Dharwar cotton is grown. This is said to be an acclimatised cotton from American seed, imported a good many years ago.

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[Continued.]

II.—COMMERCIAL ASPECT.

5480. (30) **Local trade customs.**—The various systems of local marketing, of which I have had experience, are :—

- (i) Buying entirely through dealers forming an association, who guarantee the buyer against adulteration, provided the buyer does not buy except through such association.
- (ii) Buying through dealers who give no guarantee, but merely act as brokers for the seller.
- (iii) Buying partly through dealers and partly from the ryot direct.

(2) From the point of view of the buyer, the first is, as a rule, the most satisfactory, but I question whether it is always the best system from the point of view of the ryot, who is, especially where the market is so distant that he cannot always accompany his produce, very much in the hands of the dealer.

(3) The second system is generally unfavourable to both parties. The dealer is inclined to buy up cheap rubbish and mix it with good cotton sent to him for sale. If it gets through, the dealer makes a profit; if it is detected and penalised, the client loses.

(4) Where purchases are generally made direct from the ryot, unscrupulous buyers are inclined to take advantage of ignorant and illiterate ryots. These often engage a petty broker to look after their interests, but without getting any value for the commission so paid.

(5) I have no experience of an open market under the control of a market committee.

(6) I have had no difficulty under any of the three systems in buying forward. With agents, who know the locality and the more important ryots, contracts are frequently made direct for forward delivery without any very great risk.

5481. (31) **Standardization of commercial names.**—The commercial names of the cottons with which I am acquainted are :—

Westerns.—From the Bellary and Raichur (Hyderabad) Districts and a small portion of Anantapur.
Northerns.—From the Kurnool, Cuddapah and Anantapur Districts and a small portion of Hyderabad territory adjoining the Kurnool District.

Cocos.—Red ginned from the Guntur and Kistna Districts and small portions of adjoining districts.
Fair.—The same as red ginned, but hand-ginned.

White ginned.—A short stapled cotton from Hyderabad territory, the principal centre being Warangal.

(2) All these names are well-known in Indian, English and Continental markets and I know of no reason for suggesting any change.

5482. (32) **Buying agencies.**—The best form of buying agency, in my opinion, is the employment of salaried agents at all principal centres, who get to know and keep in touch with all the principal dealers and ryots, and where such a system is in force, buy as far as possible direct from the grower.

III.—STATISTICAL.

5483. (33) **Improvement of cotton forecast.**—The cotton forecast as far as the Madras Presidency is concerned, is generally very inaccurate. The reason for this is, that in order to synchronise it with the rest of India, it is published in most cases before sowing is anything like complete. As long as this system continues, I see little prospect of its being brought to any degree of accuracy.

5484. (34) **Improvement of other statistical information.**—The cotton press returns will, I consider, not be sufficiently accurate until the returns sent by owners and managers of factories are made compulsory, and power given to verify their accuracy.

5485. (35) **Publication of Liverpool and Bombay prices.**—Most dealers taking any considerable share in the business of an ordinary upcountry market receive from Bombay daily advices of the state of home and Indian markets. To the ordinary ryot such information is of little use.

IV.—MANUFACTURE.

(a) *Ginning and pressing.*

5486. (36) **Type and number of ginned presses.**—I have had the supervision of five pressing but no ginning factories, and am, therefore, unable to offer any opinion as to the respective merits of saw and roller gins. These five factories comprise two Newmyth, one Hodgart and two Cummins presses.

5487. (37) **Size of bale.**—The sizes of the bales vary from 7 to 8½ cubic feet. The latter are, however, turned out by presses which have been working since about 1872.

5488. (41) **Condition of cotton.**—The Westerns cotton crop is perhaps one of the finest in India. I think I may safely say that it is, without exception, the worst marketed. The faults in preparation begin in the field. Owing to the scattered positions of the villages, pickers have, as a general rule, considerable distances to travel to and from their work. The result is that picking does not start till late in the day, by which time the leaf is dry and brittle and easily gets mixed with the *kapas*. That the cotton, if carefully picked, can be kept almost entirely free from leaf is shown by results I have seen on the Agricultural Department's farms.

(2) Ginning is as a rule carelessly done. The worst offenders in this respect are the small ginners in the villages. These are cheaply and badly constructed, openers are practically unknown and seed pits are seldom provided. The principal reason, however, is the very incapable class of fitter employed. The ginning season is short and owners will not employ permanent men. Fresh hands are engaged at the beginning of each season and their services dispensed with as soon as ginning is finished. Good men are therefore not attracted and the men usually available are practically untrained. As long as gins are kept running, both they and the owners are satisfied. No attempt is made to set gins to suit the staple or class of *kapas* to be ginned. The relative speed of rollers and knives receives no attention. Rollers are used long after they have become really unserviceable and paper rollers are used instead of leather from mistaken ideas of economy. Paper rollers are very much cheaper in first cost than leather, but wear out quicker.

(3) The general result is that the cotton as it reaches the buyer is full of leaf, seed and dirt. Seed and dirt can be eradicated; but leaf, once it gets into the lint, is very hard to remove.

(4) As regards suggested remedies, I would recommend the licensing of factories. The present limitation of the application of the Factory Act should also be abolished. The smaller factories require more supervision

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from every point of view than the larger. Some fixed standard of qualification should also be required of all fitters in charge of factories. The admixture of more than a certain percentage of seed in ginned cotton should be treated as adulteration. I know of instances where ryots are persuaded to bring their *kapas* to certain factories by the promise of a guarantee of a larger ginning outturn than that of a neighbouring factory. This increase in the outturn was only obtained by the deliberate admixture of a considerable percentage of seed. I have myself detected as much as sixteen to twenty per cent. of seed in so-called ginned cotton.

V.—GENERAL.

5489. (46) **Attitude of buyers to improved cottons.**—Although I have not known of a regular premium being offered for higher class of cottons, the general practice in the districts, with which I am acquainted, is to regulate price according to quality. This practically amounts to the same thing. Certain firms have recently promised to pay a higher price for cotton guaranteed to be the produce of improved strains introduced by the Agricultural Department, but I have no knowledge as to how far this has been carried out. Short stapled *kapas* generally commands a high price, if not higher than the ordinary kinds owing to its higher ginning outturn. This *kapas* is generally bought by speculative dealers to mix.

5490. (47) **Effect of water rates.**—I have no experience of cotton grown under irrigation. Black soils are not generally suitable for irrigation.

5491. (49) **Effect of tenure of land.**—I do not think that the existing tenure of land is likely to affect the extension of cotton cultivation. Holdings are generally permanent and the ryot is quick to see what crops are likely to give him the largest profit.

Mr. W. R. H. WATT called and examined.

5492. (President.) I have not done any cotton work since Christmas as I have been in Secunderabad starting new work. I had twelve years' experience in the Westerns tracts generally and I had a little to do with Northerns—in the Cuddapah district. I think that Westerns have deteriorated somewhat in staple, principally due to mixing. There has been more of *mungari* cotton grown and it is being mixed with the Westerns. From what I have seen the staple of Northerns has remained very much the same. The colour has improved during the last eight years. There is not so much reddish cotton mixed in it. The red and white cottons are kept more separate. I have seen the Hagari Farm. Some years ago, I went carefully through a lot of samples with Mr. Wood who was there at the time. I think that the line of work carried on at the farm might be useful to the trade. What is wanted is to get the staple of Westerns back. If the ginning percentage could be improved and the staple kept at the same time, the ryots would grow the Agricultural Department's cottons to the exclusion of shorter staple cotton. From the cultivators' point of view, ginning outturn and heavy yield are the predominating considerations.

5493. As to forecasts, I think that our own forecasts are more accurate than those made by the Agricultural Department principally because their forecasts have to be prepared too early to suit the crops in these parts in order to bring them out with the forecast for the rest of India. The preparation of forecasts in districts is very largely done by the village officers on the assumption that certain areas will be sown with cotton. The forecasts frequently have to be made before actual sowing.

5494. The ginning and pressing returns will not be of any use at all until they are made compulsory.

5495. I have a very high opinion of Westerns as a cotton but it is the worst marketed cotton of any. The control of ginning factories might do a good deal to secure better marketing. Picking can only be improved by the action of the buyers but there are too many small buyers who do not pay any attention to it. As long as they can find a market for dirty cotton, they do not worry about the cotton being clean. I have tried to persuade the *ryots* that clean picking would pay them. We penalize very dirty cotton. The great trouble is the leaf. The climatic conditions and the habits of the people have a great deal to do with this. In parts of Deccan, the villages are scattered. The fields belonging to a village extend to such tremendous distances from the village that the people cannot go out early in the morning as they do in the south, pick the cotton and come back to the village. In the north, they have to walk a long way and then stay out in the fields for the whole day. Absence of water supply has something to do with it. They often have to carry their water with them. Seed in ginned cotton is not a very important matter because we can take it out to a great extent. My firm has introduced special machines to clean out the seed but once leaf gets into lint it cannot be got out. You can even see it in the cloth. We buy cotton to a certain extent direct from the cultivators. In recent years, the proportion of Westerns cotton machine ginned has increased enormously. In the old days the percentage of machine ginned cotton was small. We buy a small amount of hand-ginned cotton direct from the ryots. The machine ginned cotton is mostly bought from dealers. The dealers buy the short staple cotton which gives them a heavier ginning outturn and mix it with long staple cotton so as to average up their prices. If the cotton is mixed before ginning, it is very difficult to detect, but when it gets to the mills the irregular staple is discovered. We do not do much ginning in the districts in which I have been. I believe that, after the war, as soon as we can get machinery we shall be putting up ginning factories in most of the big centres. We mostly buy lint; we do not buy *kapas* to any very great extent. There is so much humbug going on over the buying of *kapas* that we very often cannot touch the prices.

5496. The smaller ginning factories have all sorts of weights of their own and various tricks in regard to weightment, etc. Unless we were to adopt the same methods we could not compete with them. They ostensibly pay high prices but they make it up in various ways.

5497. (Mr. Wadia.) When we get the lint from the small factories, we always get it mixed. The *kapas* is mixed before ginning and then, of course, it is very hard to detect. It mixes quite easily before ginning but it is very difficult to mix short staple and long staple after ginning. We have introduced machines for cleaning cotton especially Westerns, when it comes to us. We take out something like five to six per cent.

5498. To get the higher types, we have to sell a certain quantity of lower types as well. We have to buy the average and select so that we have to get higher prices for the better quality in order to enable us to sell the lower quality at a lower price.

5499. The mixing that is going on is of Westerns with the short staple *mungari* cotton. There is not very much Bijapur cotton used for mixing with Westerns. I have known "Westerns" cottons sold as "Bijapur" but I have not known Bijapur cotton brought in to be sold as "Westerns." That might go on to a certain extent in the Raichur tract as the greater part of the Raichur Westerns is grown between Bijapur and Raichur. Raichur itself is not the centre of the cotton growing area; it is merely on the railway. Lingsugur is the centre. When the new railway that is being constructed from Hyderabad to Raichur on to Gadag is opened

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a great deal of the cotton business will probably go to Lingsugur instead of going into Raichur. As Lingsugur has no railway connexion at present, the cotton goes partly to Bijapur and partly to Raichur. From the western side it probably goes to Rijapur and Gadag and from Lingsugur it comes in to Raichur. The cotton which has the longer staple is that which has the greater percentage of *indicum*. We consider *indicum* a long staple cotton. Westerns is very largely a mixture of *indicum* and *herbaceum*, the former being the better of the two. In Guntakal cotton, there is a larger proportion of *indicum* than there is in Raichur and Bellary cotton. *Indicum* is a softer cotton but is not quite as white as *herbaceum*, which is harsher and rather coarser cotton. The larger the proportion of *indicum*, the better the staple not only from the actual point of view of length but also from the spinning point of view. I should say that the Raichur cotton is really the purest Westerns cotton, there is the least *indicum* in that. As one gets nearer the Northern tracts, the proportion of *indicum* becomes higher. I would suggest that the Agricultural Department should select pure strains and put them out. Another difficulty about the mixture of *herbaceum* and *indicum* is that the two cottons do not take dye in the same way. With a mixture of the two, one gets dyed yarn of a very patchy appearance.

5500. I do not think there has ever been very much damping in the Westerns district but the ginning in the tract is about the worst in India. They do not use openers because they think that it gives them less weight. Adulteration with sand, seed, etc., swept up from the floor is done deliberately in a great many cases. Some times the ryots are persuaded to take their *kapas* to one ginning factory in preference to another by the owner of one factory promising an outturn of say 32 per cent. against the other man's thirty per cent. He simply does it by mixing in more seed. I know that that is deliberately done. If standard ginneries were erected or if the present ginneries were remodelled so as to ensure the seed being kept separate, it would improve matters to a certain extent but the whole system wants overhauling. A certain amount of control is wanted; but it would mean a big staff, because they have started putting up small ginneries in villages right away from the main centres; some of them are thirty to forty miles away from any market. I think all the ginneries ought to be licensed. If the present restrictions of the Factory Act, which exempt factories employing less than fifty hands, were removed, that might do some good too. The smaller ginning factories want looking after more than the bigger ones. I would not make the penalty heavy. The withdrawal of the license would be sufficient, as one does not want to make things too oppressive. As to whether the power of giving licenses should be vested in a central bureau or not, that would depend very much on what the inspecting staff is going to consist of. I should think that the work would be better done by provincial committees. I think it would be better for the provincial committees to have the power of withdrawing licenses. Withdrawal by the Central Committee would be too complicated a business. False weights are used a good deal in ginneries and in pressing factories. I would make the license withdrawable for that offence too. No improvement can take place unless ginneries are controlled. The ordinary village ginneries are not very expensive affairs. Probably it would be just as cheap to pull them down and rebuild as to alter them. I have stated in my written evidence that, as long as gins are kept running, the owners are satisfied. No attempt is made to set the gins to suit the staple or class of *kapas* to be ginned. The relative speed of rollers and knives receives no attention. The owners think it cheaper to go on using old rollers instead of putting in new ones. All this is very largely due to want of competent labour and to a false idea of economy. The owners never, for instance, go into the question of the actual cost of working the gin. They never work out the actual cost per *khandi* of the *kapas* ginned, as a firm like ours does. I do not think that any of the ordinary ginning factory proprietors or managers would be able to tell you what it actually costs them to gin. Seed is sometimes dropped through the gins into the lint because when the knife gets damaged, they go on using it rather than take the trouble of replacing it by a new one. Old rollers are never replaced even if they let the seed through. The question of the setting of the gin to suit the staple of the cotton dealt with is never taken any notice of whatever.

5501. In my written evidence, I have stated that, although I have not known of a regular premium being offered for higher classes of cottons, the general practice in the districts with which I am acquainted is to regulate the price according to quality. It amounts practically to the same thing as saying that buyers pay a premium for quality. A firm does not say that, if such and such cotton is brought to them, they will pay Rs. 5 more than the market price. They pay the market price for the ordinary quality of cotton and for anything inferior they take an allowance. If there is anything better, they do not actually offer a premium but they will actually pay a little more for it. If we could get any considerable quantity of a distinctly higher type of cotton, that would be a different matter and we should certainly offer a premium for it; but we cannot do so for occasional small lots here and there.

5502. We buy cotton forward. I do not think that forward buying tends to improve the quality in any way. If the prices go against the dealer, he is tempted to bring in dirty cotton in order to try to reduce the margin to a certain extent. If the prices have gone against the dealer, the buyer, as a rule, is more lenient in passing the cotton as he is afraid that otherwise he will not get any cotton at all. As things are, we cannot afford not to buy forward, as there are so many mill buyers who want to make sure of their requirements ahead, and if they want to buy forward, we have to meet them. If forward business is to be done away with, a start will have to be made with the actual consumer.

5503. Short staple *kapas* generally commands a higher price than long staple on account of its higher ginning outturn. That is because it is mixed with the better staple. If it were marketed separately, it would not command a better price, but would probably command very much the same price. I am talking of *kapas*, not of lint.

5504. (Mr. Hodgkinson.) In forward buying, we make a contract on the basis of the fair average quality of the season. Very soon after the cotton has begun to come in, we can form an idea of what the average is likely to be. It may mean anything. We do not sell on types equal to the last year's average. There has always been a certain amount of forward buying; but it has rather increased of recent years. I do not think that the tendency of the average quality has been to deteriorate. It is better in some seasons, in others, it is not so good. It varies with the climatic conditions. As to whether when a man sells his cotton forward, there is a tendency to make as big a profit as possible by putting in bad cotton and adulterating with sand, dirt, leaf, etc., that depends on which way the prices have gone. The price is fixed when the contract is made; when the time for delivery comes the price may be higher or lower than the contract. If the price is higher, the dealer is rather apt to adulterate; if the price is low, he is more careful. If a merchant delivers cotton which is higher than the average of the season, he does not get a premium for it if he is delivering it against a forward contract. If he has got good cotton he will sell it "spot" and will not deliver it against his contract; for that he will buy and deliver other cotton. If the quality tendered by him is lower than the average of the season, he is penalized.

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5505. As to whether a mutual allowance clause as in the Bremen contract would work out here in India, I think it would be rather difficult to get the ordinary dealer or ryot to understand such a system. If they could be got to do so, it would be a good thing; but I doubt the possibility. I know that there is hedging in other classes of Indian cotton or in American cotton. If cotton were sold on the Bremen system, it might bring about cleaner cotton but I have had no experience of that side of the business.

5506. (Mr. Roberts.) This working of the "mutual allowance" clause would certainly require an arbitration authority. It would be impracticable up-country without such an authority. I think the principal reason for future buying is that the actual consumers want to cover their requirements. I do not think it is confined to the Westerns tract; it is done practically in all classes of cotton dealt with on the Bombay markets. There is far more in the Berars than there is here. There is an appreciable quantity of Westerns sold ready—something like one-fourth of the crop. It varies very much in different years. This year there has not been very much forward buying of Westerns. In Northern tracts, there has. I do not know the reason for the difference. Most of the Northern crop has been sold forward. As to the effect of a stamp duty on forward buying, I do not know whether it would make any difference. If a man wants to speculate, he will speculate, whether he has to pay stamp duty or not. You could not impose a stamp duty affecting up-country markets and not the bigger markets. I do not see how future buying can be stopped as long as consumers have to cover their requirements. If open markets similar to those in Berar were established, the ryots could be induced to bring their cotton to them for ready sale. The ryots do come into the markets now in the Westerns districts. There are markets at Adoni, Raichur and Bellary. The carts come in and sometimes the cotton is sold before it is taken off the carts. In a great many cases there are certain ryots who go to the same dealers every time. They find out what the prices are that other buyers are offering and as long as the people they are accustomed to deal with offer somewhere about that price, they sell to them in preference. There is no control over these markets; they are as a rule, simply meeting places by the side of a road. In Raichur, however, it is somewhat different. There they have a system of *dalals*, i.e., of brokers who sell on behalf of the ryots. Everything is done through them and they guarantee the quality. If one finds adulteration in the cotton that has been bought, it is invoiced back to the dealer from whom it was bought. I am referring to buyers like ourselves. It is much better for firms to have their own agents up-country. The best plan would be for the mills to have their own buying agents or to buy through big firms. If *kapas* were bought instead of lint, it would have a tendency to improve the quality, that is, if firms have their own ginning factories. So long as the ginning is done by big firms, it is immaterial whether one buys *kapas* or lint. In Tinnevely, in all cases the lint is bought from the dealer but the *kapas* comes into one's own ginning factory, where it is ginned for the dealer and he is given back his seed. In the Westerns districts, one has to buy *kapas*, seed and all and to dispose of the seed one's self. The ginning factory owners in the Westerns district are not large buyers. As dealers, they are interested in passing the cotton as dirty as possible whereas if they merely ginned on commission we could probably demand a higher standard. Where we buy *kapas*, we get it ginned at ginning factories the proprietors of which are willing to meet us on this point. We always send our own men to supervise the ginning and we see as far as possible that they keep their gins in proper order.

5507. I have seen the Hagari cottons. We have bought some; but I do not think we bought it direct from the farm. That was the year before last. It was distinctly two classes better than the ordinary Westerns. It was whiter, cleaner, better ginned and better and more regular in staple. The staple of good Westerns averages about $\frac{7}{8}$ inch. The longest is about an inch. It never goes above an inch and varies between $\frac{3}{4}$ inch and an inch. The average staple of Northern tracts is about an inch or perhaps a little over. The staple of Hagari No. 1 was above the average of Westerns. As far as I remember, it was about an inch. I have had no experience of Nandyal. We have no buying agency in Nandyal itself. I do not think that any Hagari cotton has been put out recently. The Agricultural Department is still experimenting and has not got to the distribution stage yet.

5508. There is not a very large difference in Westerns, i.e., in Westerns grown in Hyderabad and in Bellary. The proportion of *indicum* increases as one goes south and east. The cotton becomes rather softer and is not quite so white but is slightly better in staple. But the change is very gradual. I think there is rather more of *indicum* down Guntakal side in recent years. For instance, Timmancherla cotton last year was preferred by Bombay to any other. That was almost entirely due to the larger proportion of *indicum* in it. Timmancherla is two miles from Guntakal. The cotton produced from red soil is not marketed separately but is mixed with the other.

Mr. S. HALLIWELL, Mill Manager, The Anglo-French Textile Co., Ltd., Pondicherry.

EXAMINED AT MADRAS, MARCH 5TH, 1918.

Written statement.

5509. Necessity for elimination of the middleman.—In my written evidence, I do not propose to deal exclusively with the questions put forward by your Committee as I consider much of the information desired can be better supplied by the Agricultural Departments of the various Presidencies. I shall treat the matter from a commercial aspect, and take as the basis of my report, an extract from the Madras Agricultural Calendar 1917-18, page 63, written by Mr. R. Thomas, Deputy Director of Agriculture, 6th Circle, Madras :—

"Why then has the ryot, with such eagerness, taken to the cultivation of such an inferior cotton as *pulichai*? The explanation is simple. It is because this cotton gives a higher lint outturn than ordinary country cotton. It gives about 33 per cent. of lint as compared with 25 per cent. for country cotton. But some of our Company cottons also give a lint outturn as high as 33 per cent. It is the middleman who makes the additional profit on *pulichai* due to its high lint outturn. He gives the ryot a small bonus for growing it. But even the middleman can only make a profit on it as long as he can cheat the purchasing firm by calling it Tinnevely cotton. *Pulichai* is not Tinnevely cotton. It is a North-Indian cotton valued at about Rs. 160 per *khandi* of 500 lbs., when Tinnevelles are selling at Rs. 200 a *khandi*. If the ryot is fool enough to persist in growing this cotton, the inevitable result will be that as its cultivation becomes more widespread, the value of Tinnevelles will fall automatically until it reaches the price of Bengals."

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Mr. S. HALLIWELL.

[Continued.]

(2) Seventeen years ago, I was for many years in the cotton markets of the Central Provinces, and had considerable experience of the middleman. Not very far from Nagpur, a Marwari came to the *taluk* with the proverbial *lota* and *dhori*, and in a little over twenty years amassed a fortune—so it is reported—of Rs. 80 lakhs. I can honestly say that he cheated both the ryot and the purchasing firms because I saw in that market three qualities of staple established out of one original quality, the result of the ryot taking seed from the gin pits whose germinating points had been ruined by machine gins of the worst neglected type. The aforesaid Marwari, needless to say, not only had the ryots in his hands, but controlled most of the ginning factories in the neighbourhood. The unfortunate ignorance and lack of commercial knowledge of the ryot is no more pathetic than the lack of scientific knowledge of the majority of the actual consumers and manufacturers of the staple.

(3) Your Committee has headed two of its series of questions :—

(a) *Deshi* short staple cotton.

(b) *Deshi* long staple cotton.

My practical mind would substitute the following :—

(a) *Deshi* unusable staple cotton.

(b) *Deshi* usable staple cotton.

(4) In the present Madras Exhibition, the Agricultural Department of Madras is showing a board with a diagram and figures proving to the ryot the advantage of selected against unselected seed. If I remember rightly, the excess of profit from the selected as against the unselected seed is Rs. 33-12-0 per *khandi* of 500 lbs. but what is the use of these figures to the ryot if every time he is in the hands of the middleman? Then again, if it is true that the middleman gives him a bonus for growing short staple cotton, is the ryot likely to pay more which he has to do for selected seed and grow a long staple cotton yielding eight to ten per cent. less lint, if he eventually, due to the middleman, derives no material benefit?

(5) I now come to the crux of the situation. We must first do away with the middleman. Probably your Committee will say that this is impossible. The Government of India cannot reach the middleman, and this is probably true, but the middleman must be reached, and ought to have been reached half a century ago, by the spinners and manufacturers of India.

5510. *Responsibilities of mill-owners for unsatisfactory state of cotton crop.*—Twenty-five to thirty years ago, the Managing Agents of the majority of the mills in India were remunerated by a percentage on outturn and, due to this iniquitous system, their sole idea was to buy the cheapest possible cotton, spin 10s. yarn for the China market, and amass large fortunes by a commission of 2½ per cent. on outturn. They encouraged the growth of unspinnable cotton. Of late years, they have lost mostly the China markets, due to a series of circumstances and they are now turning their attention, many of them, to a usable staple in order to cater for a better quality of yarn and cloth for the better class of Indian trade.

(2) The Government of India has, doubtless, been moved on their behalf to appoint the Indian Cotton Committee, but I have no hesitation in saying that the mill-owners of India and of Bombay in particular, are entirely responsible for the unsatisfactory state of the cotton crops of India as a whole, and that the Government of India, through the Indian Cotton Committee, will not arrive at their object as easily as if the whole responsibility was thrown back on to the shoulders of the spinner and manufacturer, where it rightly belongs. The so-called managing agents or proprietors of many of the mills in India do not know the limitations of their machinery, and unfortunately for the good of the trade and the benefit of India as a whole, the mill labourers of India are not organised on the lines of European countries. While the Government of India may not be able to do away with the middleman, a thorough organisation of mill labour in Bombay on the lines of European countries would do away with the middleman in less than three to five years. There would be no market for short stapled unspinnable cotton, because if the mill labourers of India were organised, they would not be called upon to work like slaves as they have to do in many of the mills in India, due to short stapled cotton. The middleman therefore thrives on the ignorance of the ryots and equally thrives on the spinners and manufacturers because the latter have no restraint placed upon them due to the non-organisation of the mill workers in India.

(3) I have been in India 25 years and made thousands and thousands of practical tests from almost all cottons in India, and I can assure your Committee taking 20s yarn as a basis that no cotton ought to be allowed in any mill in India under a test strength of 65 to 71 lbs. per lea or 80 threads of 20s yarn. This at once would eliminate short stapled cotton.

(4) For the information of your Committee, I will at random take from my Special Test Book a few examples of cottons that do not exactly come under the term "short staple," but due to the middleman again, their price is prohibitive to turn into 10s yarn, because the latter would have to be spun at a loss :—

Test strength in 20s.

"Fully Good" to "Fine" Machine Ginned <i>Oomra</i> "Amraoti" not classed as short staple	16 lbs.
"Fully Good" to "Fine" Machine Ginned <i>Oomra</i> good staple "Khamgaon"	22 "
Superfine Machine Ginned <i>Oomra</i> "Karinja"	16 "
Fine to Superfine Machine Ginned <i>Oomra</i> "Murtzapur"	25 "
Machine Ginned Good to Fully Good Chikli	33 "
Superfine to Choice Machine Ginned, Yeotmal	30 "
Bhavnagar cotton	33 "
Parbhani cotton	37 "
Khamgaon cotton	20 "

The above cottons are not classed as short staple, and command a relatively high price in the market, due to the cleverness of the middleman, and the lack of scientific knowledge on the part of the consumer.

(5) I will now give you another example of Tinnevely cotton, on which crop the Madras Agricultural Department has spent considerable time and labour and is doubtless doing a great deal of good. On the 13th of April 1916, I received a Tinnevely sample of cotton, test strength, 46lbs. in 20s. A few days later I received from the seller another sample of Tinnevely cotton, test strength in 20s, 91 lbs. These two tests bear on Mr. Thomas' remarks with which I headed this report as follows :—"It is the middleman who makes the additional profit on *pulichai* due to its high lint outturn. He gives the ryot a small bonus for growing it. But even the middleman can only make a profit on it as long as he can cheat the purchasing firm by calling it Tinnevely cotton." I was the receiver of the above two samples. I was not cheated by the middleman because I am the actual user, and the welfare of the business over which I have the honour to control depends on my practical knowledge in detecting malpractices which do exist as shown by the above two samples under the heading "Tinnevely."

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Mr. S. HALLIWELL.

[Continued.]

(6) I could give you from my book scores of instances similar to the above, but I will no further encroach on your valuable time.

(7) In my opinion, the Indian Cotton Committee has an insurmountable task before it in its endeavours either to improve the condition of the ryot or improve the staple of Indian cotton, if not supported by the mill-owners of India who are actually responsible for the unfortunate position we find ourselves in to-day, viz., an inadequate supply of long staple cotton to meet the growing demands of the industry. It is not likely that we shall see mill labour organised in India to the pitch that I have suggested early on in this report, but if the Government of India would appoint Inspectors of Factories to decide on the maximum breakage of thread allowed for the various counts spun, they would eliminate from the various markets short staple cotton much sooner than any Indian Cotton Committee and incidentally do away with the nefarious practices of the middleman, and probably in time eliminate him altogether.

(8) The Third Cotton Forecast for all India for 1917-18 has been issued by the Department of Statistics and shows that the average outturn per acre of the present crop for all India is 66 lbs. when compared with the average outturn in America for the last few years, of say 200 lbs. per acre, and I should like to know if all this is due to climatic conditions, or to want of suitable manures, which the ryot is undoubtedly unable to purchase, due to the small margin of profit per acre which is left to him only by the middleman.

5511. (45) *Effect on cotton market of replacement of short staple cotton by long staple.*—There is one question put forward by your Committee which particularly attracted my attention, viz., No. 45 :—

"What, in your opinion, would be the effect on the cotton market generally if any large proportion of the short staple cotton at present grown in India were replaced by long staple cotton?" The effect, in my opinion would be a tremendous fillip to the industry as a whole, enormously increased profits, and the solution of the labour difficulty in the mills of India, which has baffled the Managing Agents and Owners for the last twenty years.

Mr. S. HALLIWELL called and examined.

5512. (President.) I have got strong views in regard to the organization of the cotton trade. The middleman should be got rid of but the biggest sinner is the manufacturer. That is what I have indicated in my written evidence. Of course, the root of all our trouble is short staple cotton. If the spinner does not turn it down, who will? The spinners themselves ought to organize; if the workers, i.e., the mill operatives, were organized, they would turn it down. In my opinion, forty per cent. of the cotton in India is unspinnable. Cotton that answers only to a test of 45 lbs. for 20s. is not usable for 20s. A weaver ought not to be given a cotton under 75 lbs. strength for 20s. In Lancashire, a manufacturer would not take for 20s a cotton which did not answer to an 85 or 90 lbs. test. Such cotton is only usable for 10s. I would have certain tracts scheduled and selected seed given to the ryots. If the right seed were given out, short stapled tracts would grow longer stapled cotton. When I was in the Central Provinces, the Hinganghat *bani* was being grown. That is a long staple cotton but then they developed three classes of cotton—*bani*, *jari* and *zoda*. All that tract is now practically a short staple tract. It is well known that cotton from Wardha used to be taken down to Hinganghat, pressed there, stamped with the Hinganghat mark and passed off as Hinganghat. The demand for cotton has increased enormously of late years and that enables the poorer stuff to find a ready market. I am of opinion that the short staple cotton keeps the price of the long staple down because it is used for mixing. We could afford to pay much more for long staple cotton of one inch or 1¼th inch in length. The short staple is competing with the long. That is the difficulty. The only solution is discrimination in buying with no limitation in manufacture. Undoubtedly a good deal of mischief in the way of mixing is done in the ginneries. I would schedule tracts suitable for growing cotton of a certain staple; give out selected seed and legislate to compel the ryot not to adulterate the cotton and to produce what that particular tract is capable of producing. I would have the ginneries licensed.

5513. I have been 26 years in India. My experience is that cotton has deteriorated very considerably, largely owing to increased demand and consequent mixture. I think the time will come when the short staple cotton will get down to its bed rock valuation. The present phase is only a temporary one. At present the short staple cotton is getting an exaggerated price. If there is a steadier demand for long staple cotton and if short staple cotton is sold in a pure state, the latter might automatically be pushed out. The demand for it is a spurious one. If you want to improve Indian cotton, you must commence at the right place. The quality of the cotton depends on the quality of the seed given to the ryot. Certain tracts will not grow cotton of as long staple as other tracts but there are tracts in India in which they are growing short staple which would grow long. I want to eliminate short staple cotton from tracts which can grow long staple. I think the word "outturn" is an evil in the way in which it is regarded in cotton mills in India. The mills were started with the one sole idea of outturn at all costs—work labour 15½ hours a day and produce as much as you can. The history of the Calcutta mills is a fine example of this. No limit was placed upon the working of the machinery and as a result the Calcutta mills have been an absolute failure with perhaps one exception. They ought to have been a success. They had the advantage of cheap coal and a river close at hand. If any industry ought to have been a success, it was the Calcutta mills. Short staple cotton and over working of labour were the principal causes of failure. The cheapness of their coal should have compensated for the longer railway lead as regards long staple cotton. One of the largest items of expenditure in the mills is coal. It costs me Rs. 34 per ton. I use 12,000 tons a year, i.e., about 40 tons a day. I use 1500 bales of cotton a month or 18,000 bales a year. The Calcutta mills were ruined by working on short staple cotton and the mills are not worth anything today. I had four years' experience in the Calcutta cotton mills.

5514. My mill is in French territory and there is no Factory Act in force in it. We work eleven hours. We work the press about 10½ hours. We never exceed eleven hours. We have no trade union in the mill. The Trade Unions at home dictate to the employers what cotton they should spin. That is why the organization of the Lancashire cotton trade is so efficient. The Unions stop twelve Lancashire spinning mills a year for bad spinning. If we could do that in India, we should eliminate short staple cotton in five or six years' time. It is the source of all our trouble. We want organization. In Lancashire, only a certain percentage of breakage is allowed. I do not say that no cotton should be grown which cannot bear tests of less than 65 lbs. in this country. There are rough purposes for which such cotton could be used but I do maintain that the difficulties that we are contending with today such as the mixing of short staple cotton with long should be dealt with in a proper way and that the mills in India and particularly those in Bombay should turn down mixed cotton. I test every bale of cotton I purchase up to the spindle point before I buy it. The tests indicate the enormous amount of cotton that is now palmed off on to the market at spuriously high rates. The

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[Continued.]

workers would not allow it to be used in any other country than India. I select cotton from samples and Messrs. Best and Co., who supply us, buy accordingly. I have had no experience in up country markets in Madras. We use Westerns, Northern and Surats principally.

5515. I should like to emphasise my opinion in regard to the use of Broach as the standard in Bombay. Broach is used in India as a standard to get in and get out. It is the basis like Middling American at home. It is used both for the appreciation of values and the reduction of values. The Broach test is 40 pounds for 12s counts. Is not that much too low a standard on which to base all Indian cottons? The standard ought to be much higher. The standard in Bombay ought to be the very best cotton in India instead of paying points on.

5516. As to mixing in the ginneries, I know that they take the seed indiscriminately from the pits and, of course, one then gets mixed cotton. If short staple cotton were marketed separately and were not allowed to be mixed, I do not think that it would tend to a disparity in the rates of long and short staple cotton. I am rather of opinion that I would have tracts scheduled and have selected seed under the control of the Agricultural Department or some scheme of that description. The tracts should possibly be scheduled by law. It would be very advantageous if we could compel the ryot to grow the Agricultural Department seed and nothing else but I doubt if it would be feasible. I think the Agricultural Department should have selected seed which they should offer to the ryots on most favourable terms. If they refuse to take the seed, the Agricultural Department should throw their cotton back on to the market and make it valueless. The shortage of cotton has been the cause of introducing the cultivation of short staple cotton into certain tracts in Madras and the ryots have naturally found a ready market for such cotton. I maintain that the ryots could be controlled indirectly by prohibiting bad spinning in the mills in India and by limiting them, as they do in Lancashire, to a certain breakage. That would automatically put certain cottons on the black list. It would also prevent the middleman for acting with any assurance in encouraging mixed cotton as he would know that probably next year that particular cotton would be on the black list. The mills in India use about two million bales roughly. In normal times, 1½ million bales are exported to Japan and ¾ million bales to Europe. Of a total crop of about 4½ millions bales, I would put forty per cent. roughly on the black list. The other consumers of short staple would get the cotton cheap and would get the advantage of it. I do not think that, in Japan and in Germany, there is any restriction as to the kind of cotton to be used. I do not think that it would handicap the Indian mills to put cotton on the black list. I think they would increase their profits enormously by raising their standard. If they produced a better article they would obtain a bigger profit on it. It is a strange thing that, when cotton is selling normally at 6d or 7d, it is said that the Indians are poor and that they cannot afford to pay that price. Cotton to-day is four times its normal value and there is more trade than ever. The theory that Indians cannot pay for a really first class article within reason has been knocked on the head. I maintain that if you pay a higher price for long staple cotton you benefit the ryot, you benefit yourself and you get a bigger market for your sales. We sell our cloths in India, Madagascar and in China. We sell mostly in the French colonial markets in which there is a protective tariff from which to a certain extent we get some advantages. We are selling to-day in India with larger profits than we are getting in the French colonial markets. We have placed more manufactured goods on the Indian market, I should think, in the last seventeen years than we have in the French colonial markets.

5517. (Mr. Hodgkinson.) I was brought up in the Oldham district in Lancashire. I get home every two years and I am in fairly close touch with the Trade Unions there.

5518. We use the term long and short staple cotton in India but as a matter of fact there is no long staple cotton grown in India. I should call an inch medium staple and 1½ inch long staple. When we go down the scale on the other side we get ¾ inch in Bengals. Anything under ¾ inch of an inch, I should call short staple. A staple of 1½ or 1¼ inch would satisfy our requirements for all the counts that we use in India. We do not get a staple of 1½ inch in India. The staple of Surat and Navsari is 1¼ inch, that of *karunganni* and Tinnevelles is about ¾ inch. But, of late years, in order to make my tests more easily understood by the layman, I have not been measuring the length of staple but giving strength as an easier indication. An inch staple would answer to a test of about 70 to 75 lbs for 20s. with the standard twist. I think that 30's weft would be all that would be got out of an inch staple at home. I have received samples of many of exotics such as Punjab American, but have not been particularly struck with any of them. In my opinion, we have got the best results of late years from Surats. Broach is looked upon as a standard in India. In normal seasons, Broach is up to 16s counts but not beyond. I am very doubtful if you could replace American cotton by cotton grown in India. If the ginning and picking of the Northern cotton grown at Nandyal were improved, it would spin up to 30s and 40s but not higher. I do not think that India could produce an Egyptian cotton.

5519. I do not think that the Indian mills are paying a proper premium for long staple cotton. A few only of the Indian mills recognize the value of good long staple cotton. Undoubtedly if that cotton were sent home a bigger price could be got for it. Lancashire would pay more for it than the people in Bombay. Lancashire does not get it because it is too adulterated and there is undoubtedly a prejudice in Lancashire against Indian cotton on account of the mixture and uneven staple. They think that Indian cotton cannot be relied upon. I am making cloth out of Surat cotton that pays handsomely. I hardly think that a Lancashire buying agency would be able to get good cotton by even paying a premium for it.

5520. We buy up country and we have more or less to take a fair average of the season. We have agents in the up country market; with 500 carts arriving in one day, they have to take the whole lot and class it as a fair average of the season. I think it would work satisfactorily if we could get Punjab American cotton either pure or guaranteed as mixed with one per cent. of *deshi* cotton but if the percentage of mixture is heavy, it is fatal. It is very difficult in up country markets to detect mixed cotton; one can do so roughly but when it comes to spinning yarn of a certain strength one must have absolute uniformity. I cannot tell whether *deshi* is mixed with long staple in lint if the mixture is up to ten per cent.

5521. If the spinners of India were to assist in the matter and work in conjunction with the Agricultural Department and render all possible assistance in eliminating bad spinning from their mills, that would get at the root of the whole thing, in my opinion. If a few Trade Unions as at home were to be started, it would benefit India very much indeed. The sole idea of the middleman is to get things absolutely at rock bottom price. The weavers in India, in my opinion, are well up to the standard of the goods we are making; but when you try to put on to the yarn seventy or eighty per cent. of size, the thing is utterly absurd. The trouble is due to the avaricious middleman, who does not care about quality as long as he can get cloth at a cheap rate and foist it on to market. I am putting eight per cent. of size where I was formerly putting 45 per cent. We are making an infinitely better cloth and making more profit.

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Mr. H. P. M. RAE.

5522. If you don't ask impossibilities from the work people of India, you find they are quite good workmen. I can get labourers by the hundreds. I have had my mills short of labour because I tried to spin too cheap an article. The work people are much better, now we are turning out a better article. We have one loom for each weaver. I find that, in working out the cost of cloth in Lancashire and in India, the incidence is about the same. The wages of the Indian mills work out at about the same as in Lancashire. I would not allow one man to work two looms in my mill. Low wages do not pay.

5523. (Mr. Roberts.) The great difficulty with regard to staple is that the users are not able to value it properly. They do not assist much. It would be a good thing to have a clearing station where spinning tests could be made of different qualities of cotton for the whole of India. I have no experience in Madras of buying up country. I have never visited any of the up country markets in the Madras Presidency. When I was in Berar, I used to buy ginned *docras* in Kamptee once a week. I never made any forward contracts. I bought ready cotton. Good cotton does not necessarily get a proper premium because the lower staple cottons compete with it. This is due to there being no limit on the spinners. They can put into their mills anything which they consider suitable. That keeps down the price of the better staple cotton from which we get a better article and higher value and certainly more money. That has been my experience for the last five years. The premium for short staple has gone up. We can now make more money for finer counts than for lower counts. We cannot spin 10s. yarn today and make a profit. For the last three years I have not bought any cotton for 10s. Ten years ago we used to make a fairly satisfactory profit on the 10s yarn, but there has been no profit on it for the last three years.

Mr. H. P. M. RAE, Managing Director, Bombay Co., Madras.

EXAMINED AT MADRAS, MARCH 5TH, 1918

Written statement.

II.—COMMERCIAL ASPECT.

5524. *Preamble.*—My firm are dealers in cotton and, as I personally have no knowledge of the agricultural side of cotton and only a superficial knowledge of the different methods of marketing the cotton at the upcountry markets, I propose to confine myself to the Commercial, Statistical and Manufacturing (so far as ginning and pressing are concerned) aspects of the question.

5525. (30) *Local trade customs.*—I have no experience of local conditions in the districts beyond such as I have gathered from the point of view of a Head Office having to know roughly the principles on which its subordinate agencies buy.

(2) Roughly speaking:—

In the Tinnevely District, dealers and ryots bring their *kapas* to our ginning factories, take an advance if the cotton cannot be ginned at once and a final settlement is made on the weight of actual cotton as it comes off the gins, the seed being returned to the dealer or the ryot. In the past, cotton has usually been bought when brought into the markets or for delivery two or three weeks ahead, but the high prices ruling at present have resulted in a large business having already been done (I am writing at the end of January) in 1918 season cotton for delivery up to the end of May.

(3) In the Westerns and Northern districts, the ginned cotton is brought to the presses and weighed over and paid for. In the solitary instance of Prodattur, the cotton is weighed over in bales after pressing. Contracts have always been made for rather further ahead than in the south, but this year, as in the south, the period has been much extended and cotton has been contracted for as far ahead as June and July delivery.

5526. (31) *Standardization of commercial names.*—The various grades of cotton my firm deals in are—

- (1) *Westerns* from Adoni, Bellary, Raichur, Guntakal and surrounding districts.
- (2) *Northern* (Red and White) from Prodattur, Nandyal, Kurnool and surrounding districts.
- (3) *Red Cocoonadas* from Guntur, Bezwada and surrounding districts.
- (4) *Cambodias* from the Tinnevely district and also from the country roughly between Coimbatore and Dindigul.
- (5) *Tinnevelles* from the Tinnevely district.
- (6) *Karunganni*, an improved Tinnevely strain introduced into that district by the Agricultural Department four or five years ago.

(2) The standard of Nos. 4, 5 and 6 is much higher than Nos. 1, 2 and 3 which should repay selection and breeding by the Agricultural Department: in fact, as I point out in my note on long *versus* short staple cotton, if Nos. 1 and 2 respond to selective cultivation they should turn out to be two of the best, if not the best two, cottons in India for staple, strength and colour.

(3) I think it would be a mistake to try to standardize names, as the same cotton grown in entirely different areas may, and probably will, develop different characteristics, small or great, and the name will naturally be judged by the poorer cotton. As a matter of fact, standardization of names would not last, as if the quality from any one area proved to be much better than that from other areas, a new name would be invented for it by the cotton trade here which would be accepted in Liverpool, Japan, Bombay and other markets to differentiate it from the inferior stuff.

III.—STATISTICAL.

5527. (35) *Publication of Liverpool and Bombay prices.*—I don't see any object in the daily publication of Bombay and Liverpool prices in the upcountry markets as it is merely a question of ordinary procedure such as any business man carries out for himself and he usually prefers his own information to that supplied him gratis and, in ninety-nine cases out of a hundred, would continue to get his private information in addition to official prices. Our experience both in the south and west at all our cotton buying agencies is that dealers and ryots have full knowledge of Liverpool and Bombay quotations (as required) as early or often earlier than ourselves.

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[Continued.]

IV.—MANUFACTURE.

(a) Ginning and pressing.

5528. (40) **Factory Labour.**—We find no difficulty in getting labour except in the case of capable mechanics and fitters, of whom the supply in this Presidency appears to be infinitesimal. It is essential, especially for ginning factories, which require attention to turn out good cotton, a subject to which I refer elsewhere in this statement, to have constant capable expert supervision, and this we endeavour to maintain by having European engineers who inspect the factories regularly and do their best to train the fitters and keep them up to the mark. In the west of the Presidency, the lack of fitters is especially noticeable.

5529. (41) **Condition of cotton.**—Occasionally in the south, *kapas* is brought to our ginning factories in a wet condition but this is usually only in the first two or three weeks of the season and so far as we are concerned, the practice defeats itself as it is always refused and having been re-dried betrays itself by a lack of brightness. I understand the practice is confined to some of the smaller ryots who sell their *kapas* outright to dealers and who naturally get more favourable weights by watering it. It is difficult to suggest any means of stopping it and, as it is done on only a small scale and must entail a loss on dealers, it ought to die out naturally.

(2) In the Westerns district, the condition in which the cotton reaches our presses is almost invariably unsatisfactory, being full of leaf, seed and dirt. The reasons for this according to my information are (1) bad picking; (2) bad ginning due to lack of expert supervision and disinclination to spend money to keep the gins in proper order with the result that the rollers are usually cut about and the machines generally in bad order so that the fibre is cut and the cotton full of chopped seed; and (3) the practice obtaining among the small gin owners of competing for ryots' and dealers' favours by guaranteeing a better outturn of cotton from the *kapas* than neighbouring gin owners which, of course, can only be arranged by filling up the ginned cotton with seed and dirt to make up the required weight.

(3) For the sake of the good name of Westerns and Northern, to which I refer in another part of this statement, an endeavour should be made to put a stop to these reprehensible practices, and the simplest means that occur to me at the moment would be a strict and constantly periodical inspection of all ginning factories both from the engineering and cotton points of view under the control of the Agricultural Departments. The cost of this would no doubt be heavy but the increased value and the improvement in the good name of Indian cottons should justify the outlay though it would probably not result in any actual cash recompense to Government.

V.—GENERAL.

5530. (46) **Attitude of buyers to improved cottons.**—My firm have always been prepared to encourage the growth of improved cottons by paying a premium for them: please refer to my remarks on *karunganni* in my note on the general question of long *versus* short staple cotton.

5531. **Long versus short staple cotton.**—I have no expert knowledge of the agricultural side of this question beyond a general idea that most of the short staple varieties seem to yield more *kapas* to the acre and more cotton from the *kapas* than most of the long-stapled cottons do, so I intend to confine my remarks to the commercial side of the question, i.e., the point of view of a cotton dealer seeking how best to fulfil the wishes and needs of his buyers, the spinning mills, and therefore to encourage the growing of the most valuable and marketable cottons.

(2) Practically all the cottons in this Presidency may be described as long-stapled varieties with the exception of Red Coconadas of which I know very little beyond that, in its pure state and unmixed with white cotton as it has been for some years past, it is a very suitable cotton to spin yarn and weave cloth for dyeing purposes as it takes dye very well.

(3) The principal outlets for Madras cottons prior to the outbreak of war and since then are roughly as follows:—

Westerns—

Pre-war—Germany, Austria, Italy, Japan, Bombay mills and Madras mills.

Since war—Bombay Mills largely, Japan and Madras mills.

Northern—

Pre-war—Belgium and Madras mills.

Since war—Madras mills and Bombay mills.

Tinnevelly—*Cambodias*—

Pre-war—Bombay, Madras and Southern Indian mills, Japan and Liverpool and small quantities to Italy, Germany and Austria.

Since war—Same except Germany and Austria.

Karunganni is only coming into the commercial stage during 1918 and the one or two thousand bales we were able to buy during 1917 were principally distributed between Liverpool and the Madras Mills.

(4) Granted that all these five varieties are long staple cotton, it may pertinently be asked why Liverpool never took any Northern and Westerns. The reason lies in the fact that both cottons are badly picked, badly ginned and generally full of dirt, seed and leaf, so that the blow room loss varies from sixteen per cent. to twenty per cent. with occasional lots as good as fourteen per cent. and as bad as 24 per cent. Lancashire spinners, I understand, are not accustomed to handle dirty cottons and dislike them intensely with the result that the Continent and, later, Japan were the sole buyers outside India. On the other hand, the well picked, well ginned clean cottons of the south have always found favour in Liverpool for mixing purposes and, since the war broke out, the Lancashire spinners' willingness to buy them seems to have increased: the blow room loss on these cottons varies from six per cent. to eight per cent.

(5) The case for long-stapled against short-stapled cotton commercially lies principally at the moment in the fact that the Indian mills are using more long staple cotton than they have ever used before, due to the great difficulty in importing Manchester piecegoods which has caused them to weave finer cloths to try and

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replace the Manchester goods and to take advantage of the relatively higher prices that such goods are fetching. The result was that, throughout last year, there was always a good demand for long staple cotton even at times when the short-stapled varieties were neglected and this state of affairs is always bound to recur so long as the supply of long staple is barely sufficient for the demand and the market is glutted with the unwanted short staple. This condition of affairs has, to my mind, come to stay as the natural development of the Indian mills is towards better and finer cloths and better workmanship while every increase in the prosperity of the country means that the great bulk of the actual wearers of cotton cloths are able to afford more for cloths and the tendency of the buyers is therefore the same as that of the mills.

(6) The temptation to grow a heavy yielding short staple in place of the higher priced but comparatively poor yielding long staple must naturally be a very great one to the ryot who takes a short view, especially when (as in the case of *pulichai* in the Tinnevely district a few years ago) he can mix the short staple in with the long and with any luck get the price of the genuine article for it, but to anyone who can take a long view of the question such a policy is absolutely suicidal, as a few years of it ruins the name of the original variety and another crop is merely added to the low grade short staple varieties which are bound to be in decreasing demand in the world.

(7) The case of *pulichai* and how it was stamped out in the south by the combined efforts of the Agricultural Department and the firms in the cotton trade are no doubt known to your Committee and I will merely add that the selected strain of Tinnevely cotton which the Agricultural Department had ready at the time and which is now generally known as *karunganni* has, owing to its improvement in every way and especially in yield, given such good results to grower and cotton merchant alike that from a small farm crop in 1916 it increased to about 4,000 bales last year and bids fair to turn out between 25,000 and 35,000 bales this year and to fetch as it did last year Rs. 15 to Rs. 20 per *khandi* (500 lbs) more than ordinary Tinnevelly or Cambodias. This is a very good example of improving an indigenous cotton instead of trying an imported strain and it seems to me that the years wasted in seeing whether an imported cotton will acclimatize and whether, when acclimatized, it will reproduce itself up to standard or deteriorate, might be more profitably spent in endeavouring to improve the yield and raise the standard generally of indigenous varieties that are known to be capable of yielding a cotton that is good in staple, strength and colour. I understand that the Agricultural Department of this Presidency are now experimenting with Northern and Westerns and it is to be hoped that their efforts will meet with success as a danger has arisen in this district during the past year or two through the gradual introduction of *rosicum* which, if not stopped or supplanted by a good variety indigenous to the district, will reduce these once valuable cottons to the level of the ordinary short staple.

(8) If my argument that the Indian mills are using more and more long-stapled cotton every year and that the process will continue is admitted, then it is necessary that the improvement and increased cultivation of those varieties should be proceeded with with all possible speed: otherwise the requirements of the Continent after the war may cause such a demand for them that prices may be forced up to a level that may throw back the natural development of the Indian mills some years. An increase in short staple at the expense of long can only mean a widening in prices between the two varieties and the partial loss to India of the valuable export trade she now has.

(9) So far as the five varieties I am dealing with are concerned, every one of them (granting that Westerns and Northern are properly marketed) is suitable for the Lancashire mills and with improved methods of cultivation should fetch within $\frac{1}{4}$ d. or even $\frac{1}{2}$ d. per lb. of Middling American in Liverpool.

(10) There has been a great deal of talk about cotton growing within the Empire to ensure Lancashire being less dependent on the American crop but if what has been done and is being tried with the small crops of this Presidency could be done and carried further (as I hope it will be here) all over India, the problem would be nearer solution than it is now and in a shorter time and, if improved methods of cultivation could be introduced, the increase in quantity of the cotton crops of India would be enormous and lead to a corresponding increase in the wealth of the growers and a great improvement in the Indian mill industry also.

Mr. H. P. M. RAE called and examined.

5532. (President.) The Cotton Committee could not possibly have chosen a year in which conditions were so extraordinary as they are this year. The demand is such that there is a tremendous scramble for cotton. I am merely speaking from my experience as a seller. There is an increasing demand for Westerns in the Bombay market. In pre-war days, a tremendous lot of Westerns used to go to Germany. Since the war, there has been no difficulty in marketing it. The local mills have not been taking the whole of it; a great deal has been going to Bombay. I should say that the price of Westerns has risen slightly during that time in comparison with other cottons. The quality has not risen and there have been complaints this year about new cottons being introduced.

5533. The Northern crop is a very small one. The people who use it say that it is the best cotton on this side of India. Every bale we sell Messrs. Binny and Company take from us for their mills. Messrs. Volkarts buy some of the crop as well as Ramji Kalyanji. There are no complaints about it except, of course, the usual complaint that it is badly marketed but it is better in that respect than Westerns. There is heavy percentage of leaf and dirt in both Northern and Westerns.

5534. I have very little experience of Coconadas. I have heard complaints to the effect that, while a few years ago the crop was quite pure, i.e., entirely red, of late there has been mixing with a certain amount of white cotton. The red colour has a peculiar value for dyeing purposes.

5535. I have had experience of Cambodia practically since the beginning. There has always been one complaint about Cambodia but I do not know whether it was justified, and that is that it is comparatively weak in staple; I do not know whether it has been getting weaker and weaker or whether it is inferior in quality. If that was so, Americans would show it to a certain extent too. I have heard no criticisms of Cambodia recently as regards deterioration.

5536. We sell all our cotton on our own types. It is quite possible that there may be inferior stuff coming in but our buying agents have instructions not to buy such stuff. It is the same with Tinnevelly. The introduction of *pulichai* a few years ago was defeated by the co-operation of trade with the Agricultural Department. That was a good illustration of what can be done by the trade.

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5537. *Karunganni* is an improved Tinnevely. It is not as white in colour as Tinnevely, but it is a very good cotton. We have had extremely good reports on it from Liverpool. I approve the policy of the Department in pushing it.

5538. We had a large staff of European agents for buying in the districts previous to the war; at the present moment we have only two, one in the south and one in the west. We used to have about three European agents in each cotton tract, i.e., in the southern tract, and the Northern and Western tracts. The European agents are inspectors and supervisors. We have an Indian agent in charge of each factory and each buying agency. We pay according to qualifications up to a certain limit of salary and in addition give an annual bonus for good work. The larger part of the remuneration depends on the *bonus*. The Indian agents are generally self trained. They are natives of the district and probably entered our service as clerks. They have proved very satisfactory in the south but not so satisfactory in the west. It is very difficult to get the right class of man there.

5539. *Kapas* is brought in to us in the south because we have got ginning factories there. In the north and west, we buy nothing but lint. We do not pay for the seed in the south as the ryots insist on having their own seed returned to them. The *kapas* is brought in to us and we advance on that at once and return the seed after ginning.

5540. I keep in particularly close touch with the Agricultural Department. I know what is going on and discuss things with them. I think we can both help each other. I should say that, as far as the south is concerned, the Agricultural Department is working on excellent lines but that they are not quite so advanced in other districts.

5541. I do not think that the standardization of names is practical politics. If *karunganni* had been classed as Tinnevelles, it would not have been long before it was being sold under some other name than Tinnevelles or on standard types. Our work is done mostly on types.

5542. As to the cotton forecasts, I do not know how far they are to be relied on in other parts of the country. I think it is a very difficult thing to make a forecast for this Presidency and to satisfy at the same time the rest of India. As far as we ourselves are concerned, we simply go on the report of our agents. The Agricultural Department and the trade might assist each other a good deal in obtaining information as to the state of the crop. This has been done this year.

5543. I do not think that the publication of Bombay and Liverpool prices would be of any advantage to the cultivator; as far as the dealers are concerned, our agents complain that the dealers know all about prices sooner than they do.

5544. (Mr. Wadia.) Generally speaking, there is a greater scramble for long staple cotton than there used to be in India. As I said just now, before the war a great deal of Westerns used to be exported to the continent; more of that is now being consumed in this country. I should say that the reason for the increased demand for long staple cotton in India is that the mills are spinning finer counts and weaving finer cloths to replace the stuff that used to be got from Lancashire. They are now making shirtings and checks. I have handled a certain amount of mill products from the Vishnu Mills at Sholapur.

5545. The Bombay Company's cotton gets better prices in Bombay than other cotton. That is probably because we are very careful in our selection, and do not mix; we try to clean the cotton better. We have been experimenting for two or three years with cleaning machines. We knock about six per cent. out of the ordinary Westerns cotton before we market it. What is tendered to us would not be mixed to any great degree. Our agents know sufficient about it to spot a mixture, if it is at all a heavy one. We have no gins in the Western districts. We do not buy the *mungari kapas*. It is very much mixed and a good deal of it is very inferior. Seed, leaf and stones are mixed with it. The cultivators hold it up and mix it with the later crop. It forms about ten per cent. of the crop in the Bellary district.

5546. I should say that the bulk of the mixing which goes on is done deliberately in the gins and presses, and that cotton is deliberately damped. I do not know what suggestion to make to stop this deliberate mixing beyond having some form of control over the ginning factories. That would make a very marked difference. I am in favour of the licensing of ginneries. Some of the smaller factories do not come under the Factory Act; I would have them all under the Act. If it were possible to license ginning factories, I would take the license away and fine them if they do not keep their machinery in decent order. That would certainly improve the cotton turned out. I think there is something in the complaint that there is a shortage of fitters and that that is why the people are not able to keep their gins in order. There is the greatest difficulty in getting fitters, especially in the Westerns tract. A gin fitter has to be more capable than a press fitter. Our European engineers try to keep the factories up to the mark. I do not know whether it would be any good, if there were a system of licensing of ginneries to insist that certificated fitters should be employed in ginning factories. I presume if the demand arose for them it would only be a question of paying them. Down in the Tinnevely district, there is no deliberate mixing. The south is better in that respect than the Westerns and Northern tracts. Some short staple cotton has recently been brought in from the Central Provinces into the latter tracts. We only heard of it this year. We were informed that the seed that was brought in was sold at a very high price because it gave a very heavy yield.

5547. The prohibition of the movement of *kapas* or loose cotton might be a hardship in some places, i.e., in the case of moving cotton by rail from a place where there is no press to a place where there is a press. Take the case of our ginning factory at Kadambur, which is thirty or forty miles from Tuticorin. We have a ginning factory there but no press. It suits us to rail the cotton down to Tuticorin in sacks and get it pressed there. It would not be worth while to instal an expensive hydraulic press for only a small return. If licenses were given in exceptional cases like that, it might overcome the difficulty.

5548. As to the question of short staple giving a better yield per acre and a higher ginning percentage and so paying the cultivators better, I think it all comes back to the question whether short staple cotton will get the same price in future. If mixing were stopped and short staple cotton were marketed separately, it would get its true price instead of an artificial price and the difference between the price of the short and long staple would naturally widen.

5549. I understand that the bad picking in the Northern and Western tracts is due to the difference in the habits of the Telugu and the Tamil. The Tamil gets up very early in the morning, does his work and has his rest in the middle of the day. The Telugu lives at a distance from his fields and so does not go out to work

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till late in the day when the leaves are brittle and the cotton cannot be picked clean. There is no chance of securing clean picking unless it can be brought home to the cultivators that it will pay them better. It is entirely a question of price. If a higher price were paid for clean picked cotton, I think it would probably take a long time before it filtered down to the ryot. The first person to benefit would be the dealer. It pays pickers to pick cotton dirty as they are paid by a share in the crop. Clean picking would mean a complete change in the habits of the cultivator. The difficulty is that, when leaf gets into cotton, it cannot be properly cleaned. Seed and dirt can be taken out but not leaf.

5550. The trade has been successful in conjunction with the Agricultural Department in eradicating *pulichai* but, if there had been a lot of small buyers, they might not have been able to combine to bring this about. I do not see how the same system could be adopted in other provinces. It would be impossible to get the necessary combination.

5551. I trust to licensing of ginneries to prevent mixing which, sooner or later, is going to touch the ginneries and ryots in their pockets.

5552. Exotic cottons have been failures in Madras. If the Agricultural Department can do so, they should confine their labours to the improvement of the indigenous cottons. They cannot do anything by trying varieties from another province or from another country. The Agricultural Department should control the distribution of seed if it can be done but it would require an enormous staff and an enormous amount of money as it would mean not giving back the seed to the dealer and the ryot but buying it up and sterilizing it. We actually discussed the question in 1914 with Mr. Chadwick, who was then the Director of Agriculture and with Sir Harold Stuart as a means of stopping *pulichai*. Of course the south is only a very small cotton growing district but, if you work out the value of seed that would have to be purchased to produce 150,000 bales of cotton, it means a tremendous lot of money. The Government of India would shy at it; the Government of Madras shied at it in the case of the Tinnevely district. If the Agricultural Department have an improved strain which is going to give the ryots a better yield of *kapas* to the acre than they are getting a better price, then as soon as that is successfully proved to the ryot, it does not take him long to get on to it. Take the case of *karunganni*. The production this year is 20,000 to 30,000 bales and it is only the third year.

5553. I see no harm in the levy of a small export duty but I would suggest it on the whole crop. If ginneries are licensed, there is no reason why you should not collect it there or at the presses. Of course, a certain amount is bound to escape, e.g., the cotton that was handginned and used for local consumption but I presume that would be a comparatively small percentage of the whole crop.

5554. (Mr. Hodgkinson.) We sent some *karunganni* cotton last year to Liverpool. I think it was 1,500 to 2,000 bales. We had no complaints whatever. We asked specially for reports about it and two spinners said they would like as much of it as they could get. The blowroom loss is about five to eight per cent. We do not deal with *karunganni* as we do with Northern and Westerns. It is grown in the south and so is picked early and brought in to us to be ginned in our own ginning factories. It is grown in the south. We knock about six per cent. out of Westerns and Northern with a beater. Our engineer, Mr. Middleton, devised the machines and started them running in the Westerns districts. The great difficulty was the pace at which to run them and it took two seasons to find that out.

5555. The strength test of roller ginned cotton is better than that of saw ginned. We are going to try saw gins on Westerns cotton at Bellary and to have some comparative tests made with it. The trouble with the saw gin is that it loses more lint in the ginning. I noticed that personally when the saw gins were tried in our factories three or four years ago. The seed obviously had more lint left on it after it had been through the saw gin than after it had been through the roller gin. An appreciable quantity was taken off by the roller gin after it had been through the saw gin.

5556. We buy cotton from dealers sometimes a month or two ahead. We sell on type and we endeavour to stick to our types from one year to another. I am quite prepared to sell the lower types forward but I would not sell much of my best types forward because if the crop were damaged, I should not get much of them. We do not get any premium for tendering a better than the contract type on the present contract. If the cotton coming in turned out to be better than the types, I should not ordinarily deliver it. I should sell the superior stuff on the spot on its merits and, if possible, would later on tender the required type against the contract. I have frequently had to fill up with better cotton against a contract.

5557. I am in favour of a mutual allowance clause on the lines of the Bremen contract with a premium for higher grade and an allowance for lower grade types. I do not know whether we should approve of official arbitrators but want the style of arbitration changed. Before the war, it was universally recognized that the Bremen system of arbitration was the fairest. I think that contracts on Bremen lines would tend to secure the export of cleaner cotton and would probably make Indian cotton more attractive to Liverpool. The Bremen arbitration system should be introduced into Bombay and Liverpool.

5558. The Madras market is not big enough for futures. I cover with American futures in my own business sometimes but it is not a strict cover. It is an advantage to be able to do so with a small crop like ours which, I suppose, does not average more than 400,000 bales. We very often want to sell and find that there is no one to buy. We can always sell futures in Liverpool market and usually Broach in the Bombay market. Neither Broach nor American is a satisfactory cover for south Indian cotton but I do not see that you can get any more satisfactory cover. The market down here is certainly not wide enough to allow for free dealings in future.

5559. (Mr. Roberts.) When I sell cotton at home, I sell on the East Indian contract at Liverpool. I do sell sometimes on the home guarantee contract under which the allowance is merely against the seller. It is a one sided contract. I do not know whether the home guarantee contract tends to reduce the quality of the Indian cotton but, in a general way, I should say it did. As far as we are concerned, I would not ship anything to Liverpool unless I was quite certain that it was pretty good and saleable. I do ship cotton to Italy but very little. We have only sent one lot there since the war broke out and in that case we sold it free on board, the Italian Government providing the freight.

5560. The rise in price has brought about new conditions. Everybody has begun to buy earlier than usual and we are now faced with cotton which has been bought on paper and will not be delivered for another month. We bought at Rs. 300 to 320 per Madras *khandi*. It is now worth about Rs. 450. Whether we are

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going to get delivery of it remains to be seen. I dislike this forward business up-country because it is very much a case of "Heads I win, tails you lose." The quality will probably be low. It is in the interests of the dealer to minimize his loss of profit by making the quality as low as possible so that forward buying up-country tends to deteriorate the quality of the cotton. Some of the dealers bring in inferior stuff and mix it with the superior stuff to attain this end. Whether we buy Tinnevelies or Cambodia forward depends upon our views of the market. The position is the same as in the case of Westerns and Northern. Forward buying is not worse in those parts of the Northern tract in which we are principally interested, i.e., round Prodattur than it is in the south. I do not see how forward buying up-country could be checked. I have no experience of the Bombay or Berar system but I agree that the best system of selling cotton is to sell it ready as *kapas* in open markets.

5561. *Karunganni* is absolutely free from *pulichai* this year. Cambodia fetched a very high price last year as it was bought not only by the Bombay mills but dealers bought it very largely for shipment to Liverpool. The cultivators are growing a great deal more of it this year. I cannot say whether the quality has varied very much. I have had no complaints that Cambodia is any worse than it was five or ten years ago. But I know that some of the mills we tried to interest in it stated that it was fine long staple cotton, but weak. I have dealt with it for seven or eight years.

5562. I have no experience of the cottons introduced in the Northern and Western tracts by the Agricultural Department, i.e., Sircar No. 1 and No. 2 beyond small farm lots that the Department sent to the various mills for testing purposes; amongst others it was sent to our mills at Sholapur. We do not buy at Nandyal.

5563. We used the saw gin once or twice but it always came back to the same question. The dealers refused to have their cotton ginned in it. I bought it with the idea of using it in the Cambodia tract. It was erected at Dindigul but it has now been moved up to Bellary as the reports from the Buckingham and Carnatic Mills showed that they were not going to pay us higher prices for saw ginned cotton. We are now going to try it on Western cottons to see whether it will have any effect in making that cotton cleaner. The extra premium necessary to make saw ginned cotton pay should be about ten per cent. owing to the smaller outturn of lint as compared to roller ginned cotton.

Mr. B. McL. MIDDLETON, Chief Agent, Bombay Co., Ltd., Tuticorin.

EXAMINED AT TUTICORIN, MARCH 11TH, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

5564. (1, 10 and 20) *Experience*.—My experience in the cotton trade has been gained during twelve years chiefly spent in the Tinnevely District, and to a small extent in the districts growing Westerns and Northern classes of cotton, but I propose to confine my replies to the Tinnevely District, as others of greater experience will be giving information concerning the other districts.

5565. (2, 11 and 21) *Varieties*.—The different classes of cotton grown in the Tinnevely District consist of the fairly short staple *deshi* cottons known as *upham* and *karunganni*, the long staple cotton grown from selected strains of *karunganni* cotton seed developed by the Agricultural Department and the exotic cotton known as Cambodia.

5566. *Recent deterioration in exotic cotton*.—To deal first with the subject of exotic cotton: when first introduced and carefully grown on suitable soil, a very good class of cotton was produced, but as the area under cultivation extended, with no attention paid to seed selection, the quality, in the last three years particularly, has shown so great a deterioration that its introduction into the district is a very doubtful boon. By far the greatest majority of the arrivals that come in are scrappy cotton full of deep red stain. It is only grown successfully on red soil, with neither more nor less irrigation than the correct amount—which is a good wetting once a fortnight, and it very rarely receives this treatment. The cotton grown under tanks is generally over-watered and fails, and the crop attempted upon plain unirrigated black cotton soil also fails, and it is only under very exceptional conditions of rainfall that the latter crop can ever be a success. To be really successful, this crop has to be grown as a garden crop with well irrigation, and all the best crops I have seen have been cultivated in this way. It is doubtful, however, whether the land under these conditions could not be employed in growing more useful crops, and cotton confined to the large areas of suitable unirrigated soils that are available for the cultivation of improved strains of indigenous cotton.

5567. (28) *Importation of seed*.—As regards the question of importing fresh strains of seed from America, such seed is very likely to add to the spread of disease, as even acclimatized seed is more vulnerable to the attacks of insect pests than indigenous seed.

5568. *Improvement in exotic cotton by seed selection*.—Undoubtedly, there would be an improvement in the quality of the exotic cotton grown if the ryots were to practise even such a simple form of seed selection as sifting the seed before sowing, and, doubtless, if the matter were taken up on a large scale by the Agricultural Department and selected seed in ample quantities were available for the ryots, there would be a great all-round improvement in the quality of the arrivals, as ryots, although not bothering to attempt any form of seed selection, are quite keen on availing themselves of selected seed, if they can get anyone else to undertake the work. It is my opinion, however, that the Department, as at present constituted, are doing much more valuable work in improving the indigenous strain, and that only after perfection (which is a large order) has been arrived at in the growth of indigenous cottons can their attention be turned to exotic introductions.

5569. *Success of the improved strains of karunganni*.—As regards *karunganni* cotton, this has been grown for very many years in the district; in fact, it is said by the ryots that it was the sole original cotton grown in the district, and that the other variety of *deshi* cotton, known as *upham*, was introduced about sixty years ago from the north and ousted *karunganni* in certain tracts, as it was found to stand better in bad seasons

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[Continued.]

(2) Since the question of selected seed has been taken up, the strain introduced by the Agricultural Department has been keenly bought up by the ryots, and the quantity grown is only dependent upon the quantity of seed available. The prices obtained by the improved cotton have been higher than Cambodia, the yield has been greater, and the ryots find that its growth pays them in nearly every case. Cambodia, grown under the most favourable conditions, still remains the most profitable cotton crop, but on land of only average quality this is no longer the case. The proportion of lint to seed, whilst Cambodia still leads, is better in the improved strains than in the ordinary unselected growths of Tinny cotton. The figures for last year were (per *pothi* of 346 lbs):—Tinnies 6, *karunganni* 5½, Cambodia 4½ *pothis* to produce one *khandi* of 500 lbs. of lint: but the extra outturn shown by Cambodia is set off by the fact that the value of the seed is exactly one-half that of the *karunganni* or *upham* seed, as it is said to be of fifty per cent. less value as cattle food.

(3) In fact, in my opinion, the success of the introduction of the improved strains of *karunganni* has been so great, both from the point of view of the growers and buyers, that it is a pity, owing to the very small establishment of the Department, further progress must inevitably be slow. There is also a risk that, as the growth of the improved strains becomes more general, the seed will gradually, through careless treatment, again deteriorate; and this will inevitably be the case, unless there are a sufficient number of both European and also native subordinates touring the district, keeping the advantages of careful growth and selection before the ryots, until in course of time the care of seed for sowing becomes automatic, and the haphazard methods of centuries replaced.

(4) In addition to extending the cultivation of the improved strains already introduced, I understand that the Department are by no means satisfied that they have reached finality, and further exhaustive research extending over many years, will be necessary before it may be considered that there are no further possibilities.

5570. *Desirabilities of work on upham cotton*.—Also, I consider, it is of great importance that, in addition to further and prolonged investigation in *karunganni* cotton, the Department should endeavour to produce an improved strain of the other class of indigenous cotton known as *upham*. I have constantly expressed this opinion to members of the Department, but have always met by the statement that this would necessitate opening an entirely new farm, and that this was impossible as they were too short-handed. *Karunganni* was chosen for the first trials, not because it was an inherently superior cotton, but because for botanical reasons it was an easier cotton with which to obtain results in seed selection. This reason was undoubtedly sound at the time, as good results could be obtained more quickly, but the principle of the advantage of cultivating improved strains having been definitely established, no further time should be lost in so increasing the personnel of the Department as to enable different forms of investigation to be conducted simultaneously.

(2) My reason for desiring experimental work to be conducted in *upham* cotton is that a certain amount of ground has been lost through *karunganni* strains having been pushed in districts where its cultivation was not a success. Whether it is a scientific fact or not, the growers are universally of the opinion that *karunganni* will only grow well in certain tracts: they state that it requires sea breeze to aid in its development, and also that it does not do well on the heavier class of black cotton soil. If grown outside the normal tracts, it will only do well in favourable seasons and will produce no crop in bad seasons whereas the rival *upham*, however small the rainfall may be, will always produce sufficient crop to "keep the wolf from the door."

(3) I have been asked on numberless occasions, when the Department are going to sell improved *upham* seed, and if only this is undertaken, and improved or even only selected seed rendered available, then the whole of the cotton area in this district will be under control, to the immense advantage of all concerned in the welfare of cotton.

(4) The best grades of *upham* form a very valuable cotton, being fairly long in staple and of a very white colour, much whiter in fact than *karunganni*, but not so silky. This white cotton is very much sought after by spinners, and if the staple can be improved, will be a very valuable alternative crop for the use of those ryots who consider (whether erroneously or not) that their land is not suitable for the cultivation of *karunganni*.

(5) The best *upham* cotton grown comes from a village called Pothireddiapatti, about five miles from Sattur, and the seed from this village always fetches a very high price, and is entirely used for sowing purposes. I should suggest this neighbourhood as suitable for a supplementary experimental farm, in addition to the farm at Koilpatti.

(6) The ryots state that the line which divides the *karunganni* tract from the *upham* is roughly that of the railway, the eastern side suiting *karunganni* and the western *upham*. Experts in agriculture may differ over this question, and the statement of the ryots may be merely prejudice but it is so deeply ingrained that any attempt to fight it will only discredit the useful work that is being otherwise done, and in the interests of all, an attempt at the production of pure strains of *upham* cotton appears to me to be of paramount importance.

5571. (17 and 27) *Prevention of mixing of different varieties*.—As regards this question, this does not affect this district to any extent, as far as the mixing of exotic cotton and indigenous is concerned. There is occasionally a small percentage of Tinny seed mixed in with Cambodia, but this is not intentional, and is only due to careless seed selection: nor is the mixing of the *kapas* or lint known, as such admixture is too easily detected and penalized.

(2) As regards the mixing of Tinny seed with other seeds, the noxious introduction christened *pulichai* need no longer be considered, as it has been entirely stamped out, thanks to the efforts of the Agricultural Department in co-operation with buyers.

(3) Concerning the mixing of different classes of Tinny seed, viz., *upham* and *karunganni* nearly all the seed sown is more or less of an admixture, except as regards the improved strains of the latter, and as far as my own firm is concerned, in order to help in keeping this pure, if *upham* seed is found to be admixed with *karunganni*, the dealer is allowed according to the proportion of admixture found on counting the seed after ginning. If more than a certain proportion of *upham* seed is found, the cotton is not accepted against contracts made for the delivery of farm strain *karunganni*, and thus the extra sums paid on the pure cotton are lost to the dealer, and it is, therefore, strongly in his interest that only the pure strains, without any admixtures should be sown. Fortunately, there is a clear and marked difference between the appearance of the two seeds, so that mixtures can be readily detected.

(4) If a pure strain *upham* were on sale as well as a pure strain *karunganni*, the sowing of the old mixed seed would entirely die out, and the rapid popularity of the *karunganni* makes me very optimistic as to the future of entirely pure strains throughout the district, but this would necessitate much enlarged scope on the part of the Agricultural Department.

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5572. (18) **Uses of seed and seed selection.**—Except the seed reserved for sowing, which is not specially hand-ginned, all seed is used for cattle food, and none used for oil production or exported. The value of *uppan* and *karunganni* seed is about the same when considered as cattle food, but Cambodia only half the value of the Tinny seed, as it is not supposed to have so great a food value for the cattle.

(2) The question of specially hand-ginned seed for sowing need not be considered, as if *kapas* is well ginned in double-roller gins, the seed is quite undamaged for sowing purposes, and only receives damage when the gins are badly adjusted. Single gins are more liable to damage the seed.

II.—COMMERCIAL ASPECT.

5573. (30) **Local trade customs.**—The local trade customs which govern transactions between exporters and growers are as follows. Business is done through the medium of brokers under two different systems:—

(a) The exporter makes a contract with a dealer for lint, who, in order to deliver against such contract, buys in a *pettah* or market through a *tharagan* or commission agent, who negotiates the transaction with the ryots who have brought the *kapas* into the market in carts and have stored it there until the sale is effected. The dealer, having obtained the *kapas*, delivers it into the compound of the firm buying, who gin the *kapas* on his behalf at a fixed charge, the seed being retained by the dealer and the lint being taken against the contract made.

(b) The exporter makes a contract with a dealer for lint, and in order to deliver against such contract, the dealer buys lint from sub-dealers, who cover their sales in the villages, making sub-contracts, or more usually purchases, outright direct from the growers. The ryot then delivers *kapas* direct to the factory on the sub-dealer's account, which in turn is taken in the firms books as lint delivered by the dealer against contracts. The *kapas* is ginned by the firm in the same way as in (a) and a fixed charge made, the seed remaining the property of the sub-dealer.

(2) The latter system, which fortunately is becoming more prevalent, is by far the best, as the ryot delivers direct to the ginner and buyer, and the *kapas* never enters the *pettah* or market. It is in these *pettahs* that all the mixing and watering of the *kapas* take place which has such a serious influence on the average qualities of the arrivals: the mixing done not being of different growths of cotton, but of damaged, stained and inferior cotton with good qualities to make up an average mixture, which will just be accepted by the firm purchasing and neither rejected nor too heavily allowed. Such mixing is very deleterious to the cotton trade, as it is far better for good cotton to be marketed separately, and inferior cotton to be classified and sold as an inferior grade. Practically no *kapas* ever comes out of these *pettahs* without having suffered from manipulation, and it is an unmitigated nuisance. There is, however, a tendency for this matter to rectify itself, as the purchasing firms avoid, as far as possible, making contracts with dealers who fulfil their contracts by the method of purchasing in *pettahs*.

(3) It has been suggested among buyers that Government should interfere in the matter of watering the *kapas*, which has become a serious nuisance in this district, particularly at the commencement of every season; but it is difficult to see how this could be done, as the owners would always have an excuse ready that would be difficult to disprove, i.e., that the cotton had not been watered by intention, but had been damped by rainfall and dew, when being picked and carted. The buyers have the remedy in their own hands by refusing to accept damped stuff, but unfortunately the continually increasing competition among buyers, particularly at the commencement of the season when arrivals are scarce, makes joint combination over a matter like this too utopian to be of any practical utility in stopping the practice.

(4) The suggestion of having inspectors to watch the *pettahs* does not appear to be practicable, as unless these were thoroughly reliable men, indicating a high rate of pay, they would merely be a thorn in the side of the *pettah* users and a means of extortion, without in any way modifying the situation as regards the damping, nor does it appear to me that any system of licensing the *pettah* owners would serve any useful purpose on account of similar reasons.

(5) A further system is under trial, that of co-operative societies, in which a certain number of ryots join together, pool their stocks of *kapas* and send them in for sale direct to the firms without the use of intermediary dealers or commission agents. Whether or not this will ultimately oust the present system is dubious, the difficulty being at present that the president or leading man in the society is usually entirely unversed in trade customs, and does not understand the ordinary routine of business, such as allowancing for inferior quality, etc. This will improve with experience, but there is a latent possibility that, when such experience has been gained, the leading spirits in the societies will blossom forth as dealers, and use the knowledge they have acquired for their own personal ends, and not for the benefit of the other members of their unions.

5574. (31) **Standardization of commercial names.**—I do not consider that there is any advantage to be gained by attempts to standardize the classes under which cotton is to be sold. This appears to me to be a retrograde step, as it is a return to the system under which the cotton in this district was sold up to a few years ago, when it was sold (as is still the case in America) in recognized classifications, which were standardised in Liverpool. It was at the request of our buyers that my firm altered the system and now sell upon our standard types. Having ginning factories and presses at all the cotton centres throughout the Tinnevely District, we prefer to keep the classification separate of the cotton at each of such centres, as we find that some buyers prefer cotton from one centre and some from another—minute differences which suit the buyers, but which would not appear in any system of general classification. The latter would only be firms with few presses, who buy at all the centres but only press at one, mixing up all grades to an average. I believe that there is a desire on the part of some firms in the district to establish standards upon which all cotton would have to be graded and to have the same standards for all firms to work to, and to be known by the same names. I cannot see what would be gained by this, and it would only encourage and put a premium upon the mixing of the lint from all the districts into a common, mean average of quality, to bring inferior grades up to the fixed standards. The present system of each firm establishing standards to suit the localities of their factories, and giving samples of these standards to buyers upon which their deliveries are to be judged cannot be fairer either from the point of view of the seller or the buyer.

III.—STATISTICAL.

5575. (33 and 34) **Improvement of statistical information.**—Statistics, which depend upon a very large number of subordinate Government officials, tahsildars and village headmen for their accuracy

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cannot ever be of much service, as when sending in the returns there is too much temptation to turn up the report of last year, and submit that with suitable modification. The only way of improving upon the accuracy of the forecast is to delay publication until the cotton season is over.

5576. (35) **Publication of Liverpool and Bombay prices.**—I do not see that there would be any gain in publishing the Liverpool and Bombay cotton prices in our up-country markets, as the dealers all have their daily wires from Bombay and Reuter's so that the markets are known, without official information being required.

IV.—MANUFACTURE.

(a) Ginning and pressing.

5577. (36) **Type and number of gins and presses.**—We have in this district alone, in various factories, 175 cotton gins of the type known as Platt's doubt-roller gins, the cotton from which is pressed in four presses of Fawcett Preston's, Cummin's and Nasmyth Wilson's types situated at the various cotton centres. These presses will compress the bale to a density of forty cubic feet to the ton if required.

5578. (38) **Saw gins versus roller gins.**—For experimental purposes, I obtained a saw gin of American make, consisting of seventy ten inch saws, and tried a series of experiments as to the possibility of its use for the woolly-seeded types of Indian grown cotton. It was found that spinning tests of such cotton showed that the staple had been damaged, and it was also neppy, losses all round were greater and the strength of the yarn less. Comparative tests in spinning of duplicate samples of Cambodia *kapas* showed differences as follows between saw and roller-ginned lint

	Blow loss	Card loss	Strength for full 19s counts.
	per cent.	per cent.	lbs.
Roller-ginned	7.4	6.5	85.75
Saw „	9.4	8.2	83.25

In addition to this, there was a very heavy wastage in ginning due to the fact that the seed was not ginned nearly as closely as can be done with the roller gin. This loss amounted to four per cent. as a minimum, and this alone is sufficient to put the question of unsuitability out of doubt. If used carefully for clean-seeded classes of cotton, and the gins run at a slow speed, they might prove successful, but this has yet to be proved.

5579. (40) **Factory labour.**—Sufficient labour is still available in this district, but, of course, at rates that have been much enhanced in recent years.

5580. **Single roller versus double roller gins.**—The double-roller gins in use in this district will, if properly set, gin cotton with any length of staple, and the longer the staple the better the outturn. The theory that single gins must be used for long staple cotton is quite exploded, and, in my opinion, the double gin is in every way superior. It damages the cotton less, requires less attention to keep in order and less skill in setting. As far as we are concerned, all the single-roller gins that we used to run have been thrown out and replaced with double-roller gins, and the same has been the case with other firms in the district.

5581. **Spread of small ginning factories.**—The ginning by all the firms in this district is very well done and the factories could be used as a model by any other district that I have seen. Recently, however, this reputation has not been kept up, as a large number of small native owned ginning factories have sprung up in the villages, consisting of from two to six gins which do not get the requisite expert supervision and in which consequently the cotton is damaged. This development is not beneficial because there are already erected in this district sufficient gins under European supervision to deal with the whole crop, and it is a question whether some system of Government supervision or licensing of factories could not be introduced to advantage. These small factories in themselves can rarely be made to pay and the reason why they are erected is that the ownership of a factory gives local *kudos* to the owner, for which he is prepared to be out of pocket.

(2) The danger of this extending is exemplified in the district in which Westerns is grown, where practically all the cotton is ginned in native owned factories and its value depreciated by bad ginning.

(3) The ginning factories are not only deplorably badly designed and erected, but also the owners will not go to the necessary capital cost to fit their gins with leather rollers, but use compressed newspaper rollers as a substitute, which material is inferior in every way, and inevitably leads to a reduction of the class and cleanliness of the product.

5582. **Ginning charges.**—The amount charged by the firms to the dealers for the ginning of the *kapas*, that they bring in, is very low, being only in most cases Rs. 4 per *khandi* of lint produced. This is less than in any other part of India with which I am acquainted.

V.—GENERAL.

5583. (46) **Attitude of buyers to improved cottons.**—Buyers in this district have offered and are prepared to offer very good premia for improved classes of cotton as has been demonstrated by the prices that have ruled for the improved strains of *karunganni* ever since they were placed upon the market. This will, I think, be confirmed by the Agricultural Department, who were, I believe, fully satisfied with the premia that have been paid for the lint of the improved strains which they introduced.

5584. **Possibility of development in the Tinnevely tract.**—In conclusion, I would point out that while there is not much possibility of increasing the area under cotton cultivation in this district, there is no district which offers more fertile opportunities for development on the part of the Government. The ryots are above the average in intelligence, commercial arrangements are such that the ryot gets a very good percentage of the value of his product, the ginning and marketing is in the hands of old established firms upon whom the Agricultural Department can rely for all possible assistance and, in general, the conditions are such that of all the cotton-growing districts this forms an ideal place in which the effect of more intensive plant culture can be demonstrated.

5585. **Conclusion.**—I should like to add that the opinions expressed in this effort are entirely personal and must not be considered as the opinions that are held by the firm of which I am a representative.

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[Continued.]

Mr. B. McL. MIDDLETON called and examined.

5586. (President.) Most of my experience of the cotton business has been in the Tinnevelly tract but I have had a certain amount of experience of Westerns. I am not over enthusiastic about exotics like Cambodia because the crop cannot be increased to any great extent as there is not sufficient correct soil for it. Correct soil is an important limitation and therefore, I think that the energies which have been devoted to Cambodia might be more profitably devoted to pushing indigenous cottons on a large scale. Cambodia is getting a big crop but as a constant policy I would personally prefer the other. I think that if the work of the Agricultural Department goes on, Company cottons might displace Cambodia to a certain extent. It is easier to grow a good crop of *karunganni* than it is to grow a good crop of Cambodia. On their respective merits, *karunganni* should oust Cambodia later on to a very great extent on account of its greater security provided that the present outturn and ginning percentage are kept up. Speaking as a cotton merchant, the highest grade of Cambodia is better than *karunganni* but that does not exist except in a small quantity. One might be able to get about 500 bales of it a year in the Tinnevelly circle but not more.

5587. I would like further work done on *uppam*. I should say that *karunganni* also has limitations in regard to tracts, it is a much more delicate plant than *uppam*. In a very dry year, *karunganni* suffers.

5588. I think that a very careful survey of soil limitations should be carried out by the Agricultural Department. I have seen a good deal of the work of the Agricultural Department and I am in very close touch with it. I consider that the Department requires considerable expansion both as regards superior and subordinate staff—especially of the former. The number of seed farms and also of experimental farms should be largely increased.

5589. As far as we are concerned, the crop statistics are of no use to us at all. The figures are based on the areas sown but that is only one factor; there are many other factors which govern the situation. A forecast of the rainfall would be much more valuable than a forecast of the crop. I do not think that there is any method of improving the forecast which would make it of any value. Our firm does not take the slightest notice of it. I have never heard of any scramble for it. The crop is purely and simply a question of rainfall; it is the rainfall which governs the situation; you want proper rain at the proper time. No statistics can give you that, unfortunately.

5590. I think that pure strains of *uppam* and *karunganni* could be kept separate and distinct as the ginning is in our own hands and the difference between the seeds of the two varieties is very marked so that matters could be controlled without difficulty.

5591. We are prepared to pay more for pure cotton. A good deal of cotton in this tract is marked on the certificate of the Agricultural Department and we buy as much of it as we can.

5592. (Mr. Wadia.) It is difficult to say whether there has been any great deterioration in Cambodia lately. My personal opinion is that there has been no inherent deterioration but that the commercial crop has deteriorated because there has been an extension of this variety to unsuitable soils such as unirrigated black soils. On such soils there is bound to be a deterioration in quality. Seed selection is required but it is also necessary that attention should be paid to controlling the soil on which cotton is grown. If Cambodia is kept as a garden crop on red soils and is well irrigated, it can be brought back to its original standard. If it is grown on bad soils, insects attack it. The whole struggle with Cambodia is to get it free from stain, as criticism is apt to be based upon colour rather than upon the quality of the cotton. Over irrigation makes Cambodia stained. It does not require irrigation but what it wants is watering. There is considerable difference between the two. Cambodia should be persisted with provided it is kept to suitable soils. As soon as you try to expand the crop and begin growing it on unsuitable soils, you get bad stuff. The selected strains of *karunganni* given out by the Agricultural Department are fetching higher prices than Cambodia. They are shorter in staple but they are of much better colour and are more even in staple. As to whether these strains give a higher yield than Cambodia, it is a question of soil. On suitable soils, Cambodia gives a higher yield per acre and higher ginning percentage than *karunganni*. On such soils Cambodia is the best crop that can be grown but they are limited in comparison with the total area of land available for cotton cultivation. Cambodia should be confined to the red soil tracts in Coimbatore and possibly round Dindigul and in Trichinopoly.

5593. I would suggest that improved strains of *uppam* should be given out by the Agricultural Department. They have made no efforts at all in that direction. *Uppam* is whiter in colour and shorter in staple than *karunganni*—about eighth of an inch shorter in staple but whether seed selection would improve the strain I am not prepared to say. When Mr. Chadwick was Director of Agriculture, he stated that seed selection work on *uppam* would mean the opening of an entirely new farm. If the staff of the Agricultural Department is increased, this ought to be the first step. It has been suggested that a suitable place for such a farm would be in the neighbourhood north of Sattur or near Virudupatti. I have not gone deeply into the question but good seed can be obtained on these tracts.

5594. Cambodia and Tinnevelles are not grown mixed on any extensive scale. There are occasionally a few plants of Tinnies growing in Cambodia and *vice versa* but it is not intentional. There may be some slight admixture in the ordinary seed unless it is carefully separated. Practically all the seed sown comes from the ginneries. Seed is not specially hand-ginned for sowing now a days. There is no mixing in the ginneries here, because the *kapas* is the property of the dealers until after it has been ginned. If the *kapas* of one dealer were mixed with that of another, there would be trouble. The ginneries gain nothing by mixing. If seed is well ginned by machinery, it is just as good as hand-ginned seed.

5595. I have stated in my written evidence that there is deliberate adulteration and watering of *kapas* in the *pettals*. There are all sorts of systems. One method is to stack the cotton on the top of rows of wet bricks. The cotton sucks up the moisture from the bricks and the cotton itself is not deliberately watered. Another method is to make a hole in the middle of the bundle of cotton and to pour in a *chatty* full of water. That is the primitive method and the more general one. Then if a man has got a quantity of damaged or inferior cotton he wants to get rid of, he will try to doctor it up and make it pass as something. The only remedy is for purchasing firms to refuse to buy such cotton. I cannot think of any other solution of the problem.

5596. I have heard of cotton being mixed in the presses. That is not, as a rule, a deliberate mixture of different classes of cotton. It is an attempt to get cotton of the standard on which firms like mine sell, i.e., to make the requisite types. The price of waste at the Koilpatti mills is very high. I have seen waste coming in for purposes of mixing. It is usually mixed with hand-ginned cotton and not with machine-ginned cotton.

5597. The pressing factories never damp cotton, they always try to get it dry. It is very much against

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their interests to press damp cotton. Pressing damp cotton means less pressure on the pumps but it has a fatal effect upon the cotton after it is pressed. I entirely differ from the view that it improves the staple. It makes the cotton matty.

5598. There is no mixing of short and long staple cotton here. *Pulichai* was an exceptional case. As far as we are concerned we find it pays a good deal in every way to deal in pure cotton as far as possible. It is more satisfactory instead of mixing to sell different grades. I think that a system of licensing ginneries and of withdrawal of license for deliberate mixing is rather a Utopian idea and I do not see how any scheme could be worked out to give effect to it. The only remedy lies in the hands of the buyers. If they are prepared to pay better prices, they can get good cotton. There are plenty of firms to select from. I would only recommend the licensing of factories to ensure the proper setting and maintenance of the gins and for no other reason.

5599. We regard our ginning factories as a means to an end and not an end in themselves and therefore as long as they pay their way we do not bother about profits. If people gin on commission as they do in other parts of India, I should consider Rs. 6 per *khandi* (of 500 lbs) of lint as a reasonable charge. That would make a factory pay. If anybody charges as much as Rs. 12 they are simply out to get money. If a factory is badly managed and there is not proper supervision ginning cannot be done at Rs. 6 a *khandi*. High charges for ginning and pressing eventually come out of the cultivators' pockets. The difficulty about any attempt to regulate prices is the possibility of a rebate being given, i.e., of underhand charges. On paper the charge might be Rs. 4 a *khandi* but actually Rs. 10 per *khandi* would be paid. A man would refuse to gin at the Government price unless he were paid a premium underhand. That is the obvious thing that would happen and it would be very difficult to stop. The same thing happens where there are pressing pools. In order to get as much cotton to press as possible, people press at pool rates and give a second rebate. I do not see how you can stop that by law. The pools are a distinct disadvantage to the grower as the money comes out of his pocket. Anti trust legislation on American lines seems the only means of checking them. I have not very much faith in co-operative societies for that purpose. A strong pool would be rather a difficult thing for a co-operative society to break.

5600. I am a firm believer in double roller gins. I prefer them for any class of cotton short staple as well as long. The reason why they prefer the single roller gin in the north is because India is a very conservative country. They started with single rollers and so they are going on with them. The Double roller gin is easier to set and work and produces good cotton more easily. As regards production, the double roller gin gives about twice the quantity of the single roller gin. A badly set single roller gin can take as much power to drive as a double roller gin. Grooves in the rollers are not made intentionally but if stones get into the gin, they very soon make grooves in the rollers. If a man wants to put out or crushed seed into ginned cotton there are simpler ways of doing so than by making grooves in the roller.

5601. (Mr. Hodgkinson.) I think there are areas which have not yet been tapped which are suitable for Cambodia. There is a new area in the Trichinopoly District which is growing Cambodia this year. I think there are possibilities of extending the cultivation of Cambodia in the Coimbatore District. I would certainly recommend the extension of Cambodia on suitable soil.

5602. I have stated in my written evidence that it was at the request of our buyers that my firm altered its procedure and now sells on its own standard types. That refers both to the export trade and to the mill trade. We sell on standard types which we prepare for ourselves. Fresh types are made every year but we try to keep the types exactly the same from year to year. In bad years, this means that we sell lower types instead of altering the type. I sell on the standard types of the previous year until I can get new types out. I have had complaints from home and the Continent of cotton not being up to the standard type. I do not think that the complaints were justified in the majority of cases. I have shipped types superior to my standard types and on one occasion I did not to Bombay and was allowed for it. So I have not done it again. As regards the adoption of the Bremen arbitration "mutual allowance" clause, selling cotton is not my department. My own personal opinion is that it is obviously the fairest system there is but I have not had any actual experience of it.

5603. Getting clean cotton is merely a question of paying for it. If cotton were put through openers, it would mean cleaner cotton but a high price would have to be paid for it. We cannot ship home any stuff as clean as the Texas sample now shown me. The standard of Liverpool is so high that there is a risk of being allowed on all shipments to Liverpool.

5604. I am not in favour of saw gins at all. I think that if American cotton were roller ginned, it would be an improvement. I think it is purely the labour difficulty which keeps roller gins out of America.

5605. (Mr. Roberts.) The crop of Cambodia is something like 200,000 bales and that of Tinnevelles is 125,000 bales. Cambodia has to a certain extent taken the place of *karunganni* and *uppam*—not the selected *karunganni* but the original *karunganni*. Selected *karunganni* will in course of time oust a lot of Cambodia. Cambodia might be improved by selection. That is a matter for experiment. It is quite possible that the same results might be obtained with Cambodia, as have been obtained with *karunganni*. If the seed of Cambodia were sifted in a sieve, the small badly formed seed and also the seed of *karunganni* and *uppam* would fall through. It would make the cotton pure and they would get stronger seed but they won't do that. I have had experience of the new Government types Company No. 2 and No. 3. They are a very great improvement on *karunganni* of the last seven or eight years and are much more even and regular. I put the staple of the ordinary *karunganni* at not more than $\frac{3}{4}$ th inch and that of No. 3 as $\frac{7}{8}$ th of an inch to 1 inch. Company 3—A is a very bright cotton with a nice colour. It is not possible to express an opinion as to the length of its staple until it comes in in sufficient quantities. As a matter of fact we have not found it necessary yet to have different types for different classes of *karunganni* grown by the Agricultural Department. I think the present premium of Rs. 16 for those classes is sufficient. I consider it full value. After all the premium is governed by competition; the greater the demand the higher the price. The extra Rs. 16 we pay as premium ensures our getting in as much as we can. The relative importance of *uppam* to *karunganni* at present is about half and half but during the present season as *karunganni* has become popularized, practically no pure *uppam* cotton has been brought in, all has been either pure *karunganni* or a mixture of *karunganni* and *uppam*. This is retrograde as only pure strains are wanted. Pure *karunganni* and pure *uppam* are both wanted by buyers—the mixed stuff is wanted by nobody. The *uppam* crop is more affected by Cambodia than by *karunganni* because Cambodia is grown on black soil on which *uppam* used to grow.

5606. In ginning Cambodia, we merely lengthen the stroke of the moving knives and we use larger grids, 5-16ths inch for Cambodia as against $\frac{1}{4}$ th inch for *uppam*. I do not consider platforms for double roller gins

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an advantage. The outturn of the double roller gin depends on the feeding of the gins to a great extent and that has to be done by hand; the coolies have to be continually turning the *kapas* over in the box to prevent the seed clogging the knives. Platforms round the gin make it much more difficult for the fitters to attend to the gin. There is not as much danger of mixing seed and lint as the result of using boxes instead of platforms as might be expected. There are possibilities of great improvement in the details of double roller gins. For instance, there are some parts of the gin which are supplied with the original gin which are never used in practice. The V. die is never used in this district. Then again the speeds are all wrong. We do not use Platt's speeds. The roller speed is too high and the beater speed is too low. I do not think that the roller should ever run faster than seventy revolutions in a minute whilst the beater can be run as fast as possible. Personally I run the beaters 850 revolutions in a minute. I have tried gins driven running to 1,200 revolutions. The rollers are seven inches in diameter. I believe in running the roller slow. The actual loss in lint in the saw gin is about 24 lbs in every 500 pounds of lint more than in the roller gin. The lint gets blown away from the gin and put in the condenser. There is a lot of the stuff which is made useless by the gin which chops up the staple. I made a whole series of tests lasting over a complete season. The cotton of this district is difficult to gin.

5607. I like the system of buying lint better than any other, i.e., the system under which the dealers bring in *kapas* to firms which gin on their account subsequently, as a rule, purchasing the lint from the dealer, who removes his own seed. In ginning we see the whole of the cotton and we have the whole process in our own hands.

5608. I have seen some Cambodia grown in Nandyal. It was very poor stuff.

Mr. T. R. KRISHNASWAMI AYYANGAR, Manager, Sri Chidambara Vinayakar Mills, Ltd.,
Koilpatti.

EXAMINED AT TUTICORIN, MARCH 11TH, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(b) *Deshi long staple cotton.*

5609. (10) *Experience.*—I have not much experience in this line of business except that I have been in this district and in this mill only for a period of about nine months as manager. What little experience I have gained during this short period may not be of much value, specially before such an august commission as this, and yet I shall give as much information as I can, and offer my opinions in my humble way which may be taken for what they are worth. I have not been in actual touch with cotton cultivators except on occasions when they come to our mills to sell cotton. But I may say most of the cotton purchased for the mills is bought through the middlemen.

5610. (11) *Varieties.*—*Pulichai* can be called short staple cotton or no staple cotton in this district. It was not a native of this district, but somehow it got mixed with *Tinnevellies*. On account of the greater yield, it was liked by the ryots and cultivated along with *Tinnevellies*. Steps were taken to extinguish this kind of cotton, by the united action of the Agricultural Department and all the firms dealing in cotton by entering themselves into an agreement to reject such cotton and also to penalise purchasing or selling the same.

(2) There are three kinds of cotton grown in this district (1) *Tinnevellies*, (2) *Karunganni* and (3) *Cambodia* and all of them may be said to be long stapled. *Tinnevellies* are a mixture of *karunganni* and *upnam*, although the original *Tinny* is *karunganni* proper. This *upnam* was not a native of this district, but it became mixed with *karunganni* and the ryots preferred its cultivation as it is an early and even maturing variety with whiter colour and as the labour involved in picking this variety is comparatively less than *karunganni*. It found ready favour in the northern parts of the cotton tract, as the sowings there were earlier than in the southern parts, where *karunganni* still predominates. This is also due to the difference in climatic conditions between the north and the south. Even the original *karunganni* has been greatly improved in its strains by the efforts of the Agricultural Department. These are known as Company No. 3 and 2 and have almost replaced the original *karunganni* in this district and in the course of a few years there is every likelihood of there being no mixture of *upnam* at all.

5611. (12) *Size of holdings.*—In this district, about ten acres may be taken as the average black soil holding of a ryot. Usually the ryots set apart half of their lands for cotton cultivation.

5612. (13) *Yields and profits and comparative returns.*—The average yield per acre is $1\frac{1}{2}$ pothies of *kapas*, i.e., about 350 lbs. At the present high prices, the profits per acre will be about Rs. 60 for ordinary cotton and for improved strains such as No. 3 and 2, it will be Rs. 80 to 85.

5613. (14) *Rotations and manures.*—In alternate years, cotton is grown and in the intervening year, *kumbu* (*bajra*) and fodder *chulam* (*juar*). Generally sheep manure is applied.

5614. (16) *Suitability of existing varieties.*—In this district, the right varieties of long staple cotton of Company No. 2 and 3 of *karunganni* are being pushed and it might also be improved further by selection of seeds of this kind of cotton more minutely and by supply to ryots on a large scale. This is being done by the agricultural farm at Koilpatti on a small scale and steps should be taken to enlarge it.

5615. (17) *Prevention of mixing of different varieties.*—The mixture of other kinds of cotton can be prevented in the field, if free supply of seeds to the ryots be continued by the agricultural farm for two more years. If all the firms make it a point to greatly allowance the mixed cotton and also give premium to the pure variety, then this mixing will die out a natural death in a few years time as has been the case with *pulichai*.

5616. (18) *Uses of seed and seed selection.*—Generally the seeds from the season picking are used for sowing purposes and the balance therefrom and those from the summer picking for cattle food. Ryots do not generally make seed selections but select good *kapas* for seeds, and also purchase seeds from the Agricultural Department who are scientifically doing the selection of seeds. The popular belief among the ryots that only hand ginned seed should be used for sowing purposes is now fast giving way and machine

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ginned seed is now commonly used for sowing purposes. If some gins are set apart specially for ginning seeds for sowing purposes only and for no other, and if particular care be taken in ginning them, then alone hand ginning for sowing purposes will become unnecessary.

(c) *Exotic Cotton.*

5617. (21) *Varieties.*—Cambodia is the only exotic cotton in this district which is also popularly known as American cotton, although it is a misnomer to call it by that name. It is generally grown in places where there are facilities for irrigation. As an irrigated crop, about 750 lb. may be taken as the average crop per acre.

5618. (23) *Comparative returns.*—At the present price the profits per acre will be about Rs. 150. Compared with ordinary *Tinny* and *karunganni*, this has got a longer and stronger staple.

5619. (26) *Suitability of existing varieties.*—Instead of encouraging the spread of this kind of exotic cotton or of any other kind, I would prefer improving the strains of *karunganni* as the former can be grown only in certain localities under certain specific conditions, whereas *karunganni* can be grown anywhere in the district in the ordinary black cotton soil. If at all exotic cotton is introduced, seeds selected from cotton grown in India should be used.

5620. *Condition of cotton.*—I find there is difference in the quality of cotton ginned in our factory and that brought from outside, the latter being leafy, dirty and also seed mixed. This, I think, is due, a little, to not taking particular care to keep the gins in a clean state. But it is mostly due to the cotton being ginned in small ginneries established in villages. They are badly constructed, they have no openers and they have no seed pits. These gins do not generally have trained or competent fitters and the owners cannot get such kind of persons as they are not permanently employed throughout the year and as their services are dispensed with as soon as the ginning season is over. The licensing of factories, the application of Factories Act to these ginneries and a prescribed standard of qualification for the gin fitters will, I think, remedy most of the defects pointed out above.

II.—COMMERCIAL ASPECT.

5621. (30) *Local trade customs.*—In our mills, we purchase cotton generally through dealers with whom contracts are entered into for delivery three or four weeks ahead. But this year the period has been much extended and contract has been done three or four months ahead. They bring *kapas* to our ginning factory during the season time. After ginning, the lint is taken by us and the seeds returned to the dealers who sell the seeds on their own account. The ginning season generally commences in the latter part of February and lasts for six or seven months. Afterwards dealers bring machine ginned cotton and hand ginned cotton known as *churka*. The former is supposed to be free from seeds and the latter will have a certain proportion of seeds and so they are cleaned in cots and purchased. *Kapas* and cotton are being selected before being accepted. Advances are generally given to the dealers on *kapas* or cotton brought into the mill compound and a final settlement is made after completion of contract.

5622. (31) *Standardization of commercial names.*—As already referred to by me, the commercial names of various grades of cotton in this district are *Tinnevellies* (*karunganni* and *upnam* mixed), pure *karunganni* (specialised by the agricultural farm as Company No. 2 and 3), and *Cambodia*. The former two mostly come from the southern parts of the district and the latter generally from the northern parts. I regard these names as suitable and no alteration is necessary. I do not advocate the standardization of names, as it would not last throughout and as the same cotton grown in different localities is likely to differ in quality and characteristics, and naturally new names will be invented to distinguish one from the other.

5623. (32) *Buying agencies.*—The best method would be to purchase ready cotton from the ryots directly. But as the system of purchasing through dealers has long been in vogue in this district and as the bargaining with the ryots will be troublesome, it would be better to purchase ready cotton in the open market. In my short experience, I find that this too is attended with difficulties, as all varieties of cotton are brought and mixed together in the market. Organized efforts should therefore be made to reject mixed cotton outright and the ryots made to realize that good cotton would eventually pay them better than any mixture.

III.—STATISTICAL.

5624. (35) *Publication of Liverpool and Bombay prices.*—Any forecast of cotton is not possible in India and as dealers and ryots get information of Liverpool and Bombay quotations and sometimes earlier than the firms or companies, daily publication of prices may not be necessary.

IV.—MANUFACTURE.

(a) *Ginning and pressing*

5625. (36) *Type and number of gins and presses.*—Double roller gins of Platt Brothers Maker, 20 in number, and one gin of four rollers are in use in our factory. There are no presses for cotton.

5626. (40) *Factory labour.*—There is not very much difficulty in obtaining ordinary labour except during the ploughing and harvesting season of other crops, when the operatives' absence is nearly one-sixth of the total number. In the matter of capable mechanics and fitters, slight difficulty is experienced.

5627. (41) *Condition of cotton.*—At the commencement of the season, the *kapas* brought for ginning is sometimes wet and they are generally refused or redried. At the end of the season, *kapas* of very inferior quality, probably those rejected during the season, is brought for ginning, which we only gin for hire and do not take the lint for our use in the mills.

(b) *Spinning and weaving.*

5628. (43) *Counts spun and market for yarn or cloth.*—No. 4s to 50s can be spun in our factory, but we generally spin only 20s, 22s, 24s, and 26s, as we have a great demand for them. Our principal market is *Tinnevely* and some other places in the district and also Kottar and other places of Travancore State.

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5629. (44) Condition of cotton.—Sometimes, the condition of cotton arriving in our factory is wretched, being a mixture of all varieties of cotton, inferior and superior and also of cotton waste and *koluku*. The remedy, I would suggest, is that all the firms dealing in cotton should form themselves into an organized body and try to penalise such mixture if a certain percentage is exceeded, just as was done in the case of the species of cotton known as *pulichai*, *jari* or *mailam*. To prevent its cultivation, growth and sale, an agreement known as the Tinnevely Cotton Improvement Agreement is entered into by almost all the cotton firms and the Director of Agriculture for the last three years. The effect of such an agreement was the extinction of the said *pulichai* cotton almost in all parts of this district and there are very little traces of the same now. In the same way, our desired effect may be achieved in the case of the mixture of cotton.

5630. (45) Effect on cotton market of replacement of short staple cotton by long staple.—The replacing of long staple cotton for short staple cotton at first may affect a little the cotton market by short supply, but, in the long run, it would have a salutary effect such as the lessening of labour, minimising waste of cotton, improved quality of yarn produced and of cloth woven therefrom.

Mr. T. A. KRISHNASWAMI AYYANGAR called and examined.

5631. (President.) I had no training in cotton at all before I took up the mill managership nine months ago. Till then I was a Government servant in the office of the Board of Revenue, Madras. We have a ginnyery of our own. There is some mixture of cotton at the end of the season and I think it is intentional. What we reject at the beginning of the season is brought back to us at the end. We reject stained cotton and cotton affected by insects. Hand ginned cotton has almost disappeared because of the starting of ginning factories. The cultivators think that the machine ginned seed is quite as good as the other, and so they do not take the trouble to gin their own seed.

5632. I handle Cambodia, *karunganni* and Tinnevely cotton in my mill. Both Cambodia and *karunganni* are good cottons. We generally mix them with *uppam* for spinning purposes. From pure *karunganni* and pure Cambodia, we can spin 40s to 44s.

5633. There is a big market for cotton waste. I sold some yesterday for Rs. 230 a *khandi* of 500 pounds. I sold some a fortnight back at Rs. 180 per *khandi*. I sold it on condition that it should not be used near my mills. I think most of it goes to Pondicherry. The dealers tell me that they are sending it to Pondicherry.

5634. I am in favour of a ready market. It would be a better system than the present one, because the dealers at present buy all kinds of cotton which they mix and bring to us. Sometimes we find out that the cotton is mixed and sometimes not. This would be avoided if the cotton were bought ready. My firm would come into a combination to penalise mixtures. I think that the Tinnevely cotton improvement agreement is a very sound basis of business and that the smaller firms would join in such an agreement.

5635. (Mr. Hodgkinson.) We do not buy waste. In the latter part of the season, we find some waste in the cotton that is brought to us.

5636. We spin up to 50s. We can spin 50s. out of *karunganni* and Cambodia mixed in equal proportions.

5637. I buy *kapas* as well as lint. I make sales a week or fortnight ahead, sometimes a month or so but not more than that. We do not sell yarn as far as six or eight months ahead. Owing to the high prices of yarn, I make sales of yarn level and four months ahead at present. We sell only for cash and do not give credit or sell on contract.

5638. (Mr. Roberts.) I have bought Company No. 3. It is sometimes certified by the Farm Manager that it is the produce of farm seed. I pay a premium for it of Rs. 5 to Rs. 10. It is better than the ordinary *karunganni*. In point of colour Company No. 3 is better; in point of staple Company No. 2 is better.

Mr. A. ZOLLINGER, Agent, Messrs. Volkart Bros., Tuticorin.

EXAMINED AT TUTICORIN, MARCH 11TH, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

5639. Preamble.—My activities in cotton growing districts in India have been exclusively concerned with the buying of raw cotton (*kapas*, i.e., unginned cotton and ginned cotton) which, however, owing to the nature of the trade and its conditions, seldom leads to coming into actual touch with cultivators. "My agricultural experience" in India can therefore be considered as insignificant, but I am offering below a few remarks in reply to some of the questions based on more or less incidental observations.

(a) Deshi short staple cotton.

5640. (1) Experience.—I have been stationed at Amraoti, Berar, off and on for nine years, i.e., for nine cotton seasons of five to six months each time, from 1908 to 1916.

5641. (5) Rotations and manures.—In Berar, no regular cycle of rotations seem to have been followed until quite recently. Generally speaking, cotton and *juar* were grown alternately, but apparently irregularly, and very often cotton has been grown on the same field for consecutive years, in the latter case perhaps mixed with *tur* or mixed with *juar*. Since the last few years, the Agricultural Department, Central Provinces, has endeavoured—and I believe successfully—to induce cultivators to go in for regular rotation, mostly with *juar* and lately also with groundnuts. In a few tracts, wheat is also a rotation crop.

(2) Manure had seldom been applied in Berar—until again the Agricultural Department introduced artificial manure. I cannot say whether with any great measure of success.

5642. (7) Conditions affecting increase in area.—Fluctuations in area under cotton in Berar have during the above period always been within narrow limits as cotton takes up the largest part of arable land in the Berars and cultivation of food-grains and fodder is often reduced to the bare necessities of the

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province and at times of high cotton prices is even less than what the province requires. For this same reason any substantial increase in area under cotton is hardly possible and certainly not advisable on account of its influence on prices of food-grains and consequent economic conditions, chiefly of the poorer classes including labour.

5643. (8) Uses of seed and seed selection.—Cotton seed is largely exported from the Berars to—

- (a) other parts of India in times of crop failures and fodder famine elsewhere,
- (b) to Europe.

With high cotton prices, and cheap offers for seed by export—and in times of fodder scarcity, considerable quantities of cotton seed are taken up by cultivators for cattle fodder.

(2) Prior to the introduction of seed farms and seed unions, considerable quantities of hand ginned cotton were brought to the chief cotton markets in Berar, the seed of which was mostly used for sowing purposes; occasionally *kapas* was offered for sale on condition that the seed be resold to the seller of the *kapas* after ginning, for sowing purposes, such *kapas* being ginned separately. The chief feature of such *kapas* appeared to be bulk (high percentage of lint)—a sign of good yield—as hand ginned cotton also was mostly of better bulk than most of the machine ginned cotton. Of late years (i.e., with the introduction of *roseum* cotton and seed unions connected therewith), arrivals of hand ginned cotton have decreased in Berar.

(b) "Deshi" long staple cotton.

5644. (10) Experience.—My experiences in long stapled *deshi* cotton extend over irregular short periods only, viz.:—

Guntur-Bezawada	(Coconadas)	4 months	(1909)
Coconada	(")	6 " "	(1911)
Broach-Surat	(Broach)	2 " "	(1914)
Coimbatore-Udamalpet . .	(Tinnevely-Uppam) .	3 " "	(1915)
Nandyal	(Northerns)	3 " "	(1916)
Tuticorin	(Tinnevely)	10 " "	(1917-18)

5645. (14) Rotations and manures.—I have no knowledge of the rotations observed in the above districts but may remark here that nowhere else have I seen so extensive use of manure (top dressing) being made as in the Broach-Surat District.

5646. (15) Conditions affecting increase in area.—Of the above districts, Broach-Surat is least likely to bear with an increase in the cultivation of cotton, conditions being very much the same as prevailing in Berar.

(2) I should, however, imagine that cotton cultivation could be largely increased in the Coconada district (Guntur, Bezawada, Warangal, Rajamundry, Tuni, Coconada) where to a certain extent irrigation is, or could be made available, ginning season offers no obstacle and labour supply is plentiful and cheaper than in the Central Provinces, for instance. Large tracts in the Coconada district might be more intensively cultivated than was the case in 1909 but perhaps an improvement has taken place in the meantime in this respect. Next in order as regards scope for increase of cotton cultivation I hold the "Northerns" district (Nandyal, Proddatur, Kurnool), "Salem"—(Coimbatore-Tiruppur-Udamalpet), and "Tinnevely" district (Dindigul-Virudupatti-Tuticorin), but I shall refer to these districts again under "exotic cotton."

5647. (16) Suitability of existing varieties.—The success of the so-called "Company Cotton" introduced by the Agricultural Department, Madras, in the Tinnevely district proves that a considerably better type of cotton can be grown in these parts; in the Northerns district, the Agricultural Department made experiments with improved Northerns strains which, however, appear not to have come to a close yet.

(2) Nor have I any doubt that, in Broach-Surat, the present Broach cotton which has very much deteriorated chiefly in length of staple could not be improved upon, chiefly by better seed-selection, but I do not know whether any efforts have been made in this direction.

5648. (17) Prevention of mixing of different varieties.—Malpractices in the mixing of better quality cotton with inferior styles are widespread in India and somewhat difficult to combat in certain districts. This problem has been satisfactorily solved by the Agricultural Department, Madras, with regard to so-called *pulichai* cotton in the Tinnevely district, and I venture to opine that the same measures might be applied probably with equal success, to the Northerns and Coconada districts where inferior, short stapled cotton has been introduced by rail from Bengal and Ganjam (Tuni cotton) and mixed with the local types at the factories. The consequent mixing of seed leads, of course, to gradual deterioration of the better local types. The measures adopted in the Tinnevely district against *pulichai* are—

- (a) examination of growing crops in the field by officers of the Agricultural Department and destruction of *pulichai* plants mixed with Tinnevely, the purchase of the whole yield by the Department of *pulichai* fields and destruction of respective seed,
- (b) examination of Tinnevely cotton or the seed thereof at factories by factory-owners or buyers for admixtures of *pulichai* and rejection of admixtures exceeding two per cent. *pulichai* and heavy allowances imposed on sellers for admixtures of two per cent. or less.

This year, large tracts seem to have been sown in certain Tinnevely districts with Cambodias mixed with Tinnevelles; and careful supervision on the part of buyers at time of ginning will be necessary. But the seed from such mixtures constitutes a danger to the purity of the Cambodia even if it is not purposely used for resowing, and from this standpoint alone, such practices should be made the subject of propaganda by the Agricultural Department.

(2) In the Broach-Surat District, similar conditions have prevailed for years past, short stapled cotton having been introduced by rail from *Oomra* and Bengal districts to be mixed with Broach styles. The quality of Broach cotton has for years steadily deteriorated, and very likely these foreign seeds have had a great deal to do with this deterioration. To put a stop to it is less easy in Broach than in other districts farther away from Bombay; the nearness of the Bombay market causes a great number of merchants in Broach, etc., to deal with Bombay direct, and thus the control which can be exercised by a smaller number of exporting firms, as in the Tinnevely district for instance, is made considerably more difficult. This is further enhanced by the very large number of middlemen in the Broach district—who take no further interest in cotton cultivation and who are mostly responsible for the importation of foreign inferior styles, and also the prevalence of small ginning factories distributed all over the interior makes supervision, such

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as is exercised by the Agricultural Department and by buyers in the Tinnevely district under the *pulichai* agreement, one further difficulty. Under such conditions, probably nothing else but legislation would put a stop to this practice.

(c) *Exotic cotton.*

5649. (20 and 21) *Experience and varieties.*—The only exotic cotton I have had to deal with is Cambodia in the following districts :—

Coimbatore-Udamalpet	(3 months)	1915
Nandyal	(3 „)	1916
Tuticorin	(10 „)	1917-18

5650. (25) *Conditions affecting increase in area.*—That the cultivation of Cambodia cotton can be vastly increased is proved by this year's increase in acreage in the Coimbatore and Tinnevely districts, the increase in area under Cambodia cotton being estimated to be from 25 to 100 per cent. over last year, at the expense of rice and Tinnevely cotton cultivation.

5651. (26) *Suitabilities of existing varieties.*—The rapid development of Cambodia cultivation has shown that, where the soil and climatic conditions are favourable, and irrigation available, the cultivator is very well alive to the increase in income which the growing of Cambodia means to him and the good enquiry from consumers at satisfactory prices testifies to its suitability for spinning.

(2) If the experiments and trials of the Agricultural Department, Madras, with a further improved style of Company cotton are ultimately successful enough to justify general introduction, Cambodia will receive a serious competition in this new type, at least in the Tinnevely area, on account of its whiter colour and gloss, as well as regularity and length of staple. I understand that these experiments are, however, not concluded yet.

5652. (27) *Prevention of mixing of different varieties.*—On the question of mixing with inferior growths, I have already commented; I would like to add here the practice of certain cultivators to let Cambodia plants stand over for two seasons instead of sowing a fresh crop every year. This practice is equally condemnable as mixing with inferior styles, the cotton from “old” plants being far inferior to fresh sowings in length and strength of staple as well as in colour and cleanliness. The Agricultural Department, Madras, should try to prevent this practice as much as possible as it is impossible for the trade to do so. The so-called third and fourth pickings of one-season plants must be taken up by the trade although they are far lower than the first and second pickings and pickings from old crop plants can be mixed therewith so that the buyer has really no opportunity to refuse the pickings from two season or old crop plants.

5653. (28) *Importation of seed.*—American and Egyptian seed may be imported direct by the Agricultural Department and trials made therewith at Government experimental farms but successful varieties should only be pushed after trials extending over several seasons and the first seed given out for growing on a commercial scale should be kept with a few cultivators and agricultural or seed unions. When the Central Provinces Agricultural Department tried to introduce *buri* cotton, there came occasionally small arrivals into the market (half cart at a time or may be one or two carts) but in any case not enough to make it worth his while for the buyer to keep it separate. Thus he had no choice but let such long stapled *buri* cotton go with the rest of short stapled cotton and therefore could not afford to pay as much as he would willingly pay for marketable quantities, and, as a consequence, the grower was disappointed.

(2) Later on, when agricultural and seed unions are more firmly established, they might assist the Agricultural Department in such trials of exotic and other varieties—but the above-mentioned circumstance should be kept sight of. Disregard thereof leads to disappointment of the growers and unjust complaints that trade is not giving enough assistance.

(3) In this as well as in various other respects it would, in my opinion, be advisable if agricultural and seed unions were to invite representatives of the cotton buyers (local mills and exporters) to their meetings once or twice a year, where such is feasible, in order to benefit from the observations and experiences of the cotton buyers.

III.—STATISTICAL.

5654. (33) *Improvement of cotton forecast.*—Speaking generally, the Government forecasts have hitherto mostly been unreliable and rather late to be of much use to trade. The acreage figures, to start with, ought to be available sooner and not, as is very often the case, when the crop actually begins to move already. To obtain more or less accurate forecasts from officials, who have not the time to give which the subject requires, cannot be expected. The most reliable estimates should be available from the village headmen, who however, for revenue reasons, are likely to under-estimate. The next best medium should be the Revenue Inspector and the Agricultural Circle Inspector. If these officials are trained to the job and kept in the same circle for some years, they ought to be able to submit estimates which might have some claim to accuracy, provided they have the opportunity to check them from season to season. Experience and knowledge of the yield for each season for their respective circles are essential. Co-operation with private firms who make their own enquiries into crop conditions would probably help further in the compilation of accurate forecasts. The data so collected should be made available sooner than is the case now by publication in the official Gazette, perhaps by leaflets, to which interested parties could subscribe to cover expenses.

5655. (34) *Improvement of other statistical information.*—The above suggested leaflets might contain arrivals at the principal markets (as published by the Central Provinces Government where such markets exist) as also the press and mill returns now published separately.

5656. (35) *Publication of Liverpool and Bombay prices.*—Bombay and Liverpool cotton prices may be officially published where cotton markets exist—elsewhere I do not see what useful purpose such publication would serve.

IV.—MANUFACTURE.

(a) *Ginning and pressing.*

5657. (36) *Type and number of gins and presses.*—The gins used in the firms factories are double roller gins for soft long stapled cotton and single roller gins for rough short stapled cotton. The presses vary in system; at Tuticorin we have an Octopus Press, at Coimbatore a Hodgart Press.

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[Continued.]

5658. (37) *Size of bale.*—The bales turned out by these presses are:

at Tuticorin: 500 lbs. bales of $9\frac{1}{2}$ — $10\frac{1}{2}$ cubic feet.
at Coimbatore: 400 lbs. bales of $10\frac{1}{2}$ cubic feet.

5659. (40) *Factory labour.*—As a general rule, factory labour is available in sufficient quantities in aforementioned districts; scarcity of labour, however, occurs at times of epidemics, or where the number of working factories at one and the same place is suddenly increased. At such places wages are correspondingly higher.

5660. (41) *Condition of cotton.*—Tampering with cotton is fairly frequent; in the Berars, excessive damping of hand ginned cotton is freely practised by the ryots themselves; in the south, and in Tuticorin in particular, false packing of hand ginned cotton by ryots and dealers is almost the rule. Machine ginned cotton is less subject to such practices as the ginning is mostly under responsible supervision in the southern districts and Berar, but false packing of machine ginned cotton is again frequent in Broach.

V.—GENERAL.

5661. (46) *Attitude of buyers to improved cottons.*—No sooner are improved cottons available in marketable quantities than buyers, in my experience, have been very keen to encourage cultivators. The fact that, in this district, Rs. 10 to Rs. 16 per 500 lbs. have been paid as premium for improved Company cotton over ordinary Tinnevely may serve as an example.

Mr. A. ZOLLINGER, called and examined.

5662. (President.) I was a long time in Berar. For Berar, it seems to be a sound thing to push *roseum*. Of course it has replaced a better staple cotton. *Roseum* gives a much better yield than any other variety and Berar cotton had deteriorated in staple very considerably even before the introduction of *roseum*. Only say four or five years ago, Berar cotton did not have very much staple to speak of so that I do not think that the even shorter staple of the *roseum* can have made very much difference compared with the financial advantage of its better yield to the cultivator. Nor do I think that it really very much matters to the trade provided *roseum* is kept to definite areas. It would probably be a sound thing to schedule certain tracts as suitable for it. *Roseum* spreads on account of its high ginning percentage and because it gets mixed with other cotton. It is quite a sound cotton to go on with in Berar but I certainly do not want to see any *roseum* in Madras. If *roseum* were encouraged by the Agricultural Department I should consider the policy wrong. *Roseum* should not be grown in parts where better staple cotton can be grown and is equally profitable to the cultivator.

5663. In districts like Broach, experience has shown that cotton of better quality and class as well as staple can be grown. If that better quality cotton is grown pure and is kept free from admixture, I do not think that the argument that the cultivator gets a better financial return from the shorter stapled cotton holds good. The trade does not pay perhaps at the present moment for the so-called better staple quantities because it is a case merely of name and not of actual quality. In fact this Presidency serves as an example in that respect. Here ordinary Tinnevely cotton has always been known as one of the best staple cottons that India produced and yet when the Agricultural Department introduced Company cotton, all the buyers were prepared to pay a handsome premium over and above the rates for Tinnevelies. I do not know why that should not hold good everywhere.

5664. I cannot say whether the relations between the trade and the Agricultural Department are closer here than they are in Berar. In Berar, I was fortunate enough to meet all the officers of the Agricultural Department very frequently. I knew them all personally, so that in that respect it is much the same as it is there. It was less so in the Bombay Presidency but that was merely accidental as my stay there was of shorter duration.

5665. I do not think for any of the cotton districts near to the Bombay cotton market any such measures as the *pulichai* agreement here would be easily adoptable. Here they were possible on account of the distance from Bombay. Up there the market is flooded with a number of merchants from the Bombay side who could not be taken into an agreement such as exists in this Presidency for *pulichai*. Down here we have only got a few large firms. In Bombay, there are a very large number of small and irresponsible merchants. The deterioration in Broach cotton is chiefly due to the people who handle most of the crop up there. They are mostly members of the Borah community. There are a number of petty dealers who enter into forward contracts, speculate generally and if the market happens to go against them, they make no scruple about selling anything that they can get hold of as Broach cotton. I had only one season's experience of Broach in 1914. The complaints in regard to the actual deterioration of the Broach crop have become more marked of late years chiefly because the import of foreign *kapas* into the Broach district has been more marked of late than it was before.

5666. I have been handling Cambodia, Tinnevely and the so-called *upam* in these parts. Cambodia is undoubtedly the best of these and it seems to be paying the cultivator best, otherwise he would not have gone in for it so largely as has been the case. This is my second season here. I have bought both Company No. 2 and Company No. 3. They are undoubtedly a great improvement on the ordinary Tinnevely. When the cotton is clean and well picked and the stained *kapas* is removed before ginning, it is a very beautiful cotton and a good price can be got for it for one can sell it to any body. We sold some to the Bombay mills and they were very pleased with it and asked us for more this year. *Upam* is a coarser and rougher cotton than ordinary Tinnevely. It is also slightly shorter in staple. I would rather push it back. We can do better with *karunganni* where that grows well or else with Cambodia where the country is suitable for it.

5667. There is certainly scope for the development of the Department of Agriculture in Madras. The officers of the Department all complain that there is too much work for them and that they cannot devote as much attention to various subjects as they would like. The existence of the Department has been thoroughly justified.

5668. As regards the question of crop forecasts, I hesitate to answer. As regard this Presidency, I would not like to go on the result of one year's experience. In the Central Provinces, I went into this question very thoroughly with Mr. Low when he was Director of Agriculture and with Mr. Clouston and we discussed how the forecasts could be improved upon. I do not think that Mr. Clouston's idea of estimating the return by counting the bolls, buds and flowers in a field is feasible in India. Fields lying next to each other may

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[Continued.]

have an altogether different crop owing to differences in the time of sowing, differences in the soil and different treatment in regard to weeding. My idea on this subject is that, if the Agricultural Department had a sufficient staff to assign a smaller district to a particular man whose work it would be to make enquiries during the cotton season and to form opinions himself and if he were able to judge exactly what the real result had been, it would be possible in course of time for the Agricultural Department to give a fairly accurate forecast. I think the expenditure involved would be justified by the desire of the trade to have such a forecast. This particular season furnishes an illustration of the value of an accurate forecast. The arrivals in Bombay for the month of April were originally estimated at 43 lakhs, and finally at 22 lakhs which upset the trade absolutely. I am a believer in accurate statistics.

5669. The press returns are useless at present as some presses fail to send in their reports. I am in favour of making them compulsory. When we were discussing these points in the Central Provinces, I pointed out that unless there is a correct check on the previous year's estimate, the same mistakes are repeated. In consequence, the system of press returns and of market arrival returns was introduced up there.

5670. (Mr. Wadia.) I was in Berar for nine seasons. *Roseum* was not known in the Berar in 1908; at least it was not known to me. The Agricultural Department started by making experiments with it on small areas on the farms but their original favourite was *huri* cotton. They had to give up *huri* cotton which was a long staple cotton because it would not pay the cultivator on account of its poorer yield and poorer ginning percentage. It was also liable to red leaf blight. I remember that Mr. Clouston complained to me that we did not pay sufficient for *huri* cotton to make it pay the cultivator to grow it but, as I have mentioned in my written statement, the *huri* that came to the market came in small quantities and we could do nothing with it. The cotton brought in was that of cultivators who had been guided by the Agricultural Department and the cotton which they brought for sale was pure. It was owing to the small quantity that it did not fetch a premium. When the Agricultural Department introduced *roseum*, they gave up all experiments with *huri*. We have sold *roseum* cotton from the Agricultural Department farm at Akola in Bombay and it fetched better prices than were being paid for fine Amraoti. We took it over from the Akola farm and despatched it to Bombay and sold it on its own merits. It contained some inferior bales which were disposed of separately but the best *roseum* fetched a higher price than fine Amraoti. That may have been due to clean picking. There are certain firms in Berar which select carts of *roseum kapas* and keep them separately, but I should think that 99 per cent. of the native merchants, who, after all, form the greater part of the buyers use *roseum* for mixing with the ordinary Berar cotton as it has got a better colour. Even if *roseum* cotton were kept separate and not allowed to be mixed, I do not think that it would get a lower price as long as it is cleaner than the ordinary styles. The cleaner the cotton, the greater the advantage to the mills as there is less blow room loss. As far as I know, although the mills know that the staple of *roseum* is short, yet they have been willing to pay a better price for it. As to the question what would happen if *roseum* were not allowed to be mixed and the quantity went on increasing, that would depend on the attitude of the ultimate consumer: if that happens to be the Indian mills, so long as we have a certainty of being able to dispose of this cotton at a price which is above the ordinary styles, we as buyers up country are certainly prepared to pay a better price for this cotton. If our ultimate buyers decline to pay the price they were previously willing to pay, it would, of course, re-act on our attitude. The question is rather one for the mills. A point I may mention in this respect is that as far as export is concerned, it may be that the present high sea freights may induce the spinners at home, though not in England, to pay a better price for clean cotton even if the staple is somewhat shorter.

5671. The real cause why the difference between Surat and Broach cotton has widened is that the dealers in Surat cotton are different from those in Broach. They keep to their pure selection and they are not so speculative as those in the Broach and Palej district. If they are, they are perhaps more honest. The reason why Broach has lost its name is undoubtedly the practice of bringing in anything which could be got hold of from Khandesh, from Berar or from Indore. Wherever they could get hold of cheaper cotton, it was brought to Broach. I have never heard of anything of that kind further south in the Surat and Navsari districts. It was only up above Surat. If they have no opportunity of mixing anything inferior with the cotton grown in the district, I think the system of mixing would stop by itself. A recommendation that no cotton should be transferred by rail from one station to another except to a port or mill would have to be thought out very carefully. It would be a good thing in the case of Broach but, in the case of this Presidency, I may point out that, if I have the opportunity of bringing in loose cotton from Coimbatore to Tuticorin, I should certainly do so for the simple reason that the presses in Tuticorin give better measurements than any of the presses in the Coimbatore district. Except for this there would be no hardship in a general prohibition and I would be inclined to recommend it. At Amraoti it was found that Bengal *kapas* was railed to Berar. That should be stopped, if it is possible to do so. I have actually seen the mixing of *kapas* in ginneries. That causes the seed to be mixed and the mixed seed is sown again the following year, especially in the Broach district. That is decidedly a cause of deterioration. After it became a general practice in the Broach district to introduce foreign *kapas* by rail, the deterioration in staple which had been noticeable previously became much more marked. I think that in Amraoti there was a cotton market committee the purpose of which was to watch over doings in the cotton market. Unfortunately it was composed of *vakils* (lawyers) who did not take any interest in the matter but, failing some other body, if such a cotton market committee were to watch over such doings as those I have mentioned and were given power to prevent them in some way or other, as after all they are only a little better than simple cheating, that would probably put a stop to it. The fact that no body says anything makes people do such things.

5672. I do not think that it would be a good thing to have ginneries licensed. This country is full of small ginning factories consisting of two or four gins which are not even under the Factory Act. Some of them are forty or fifty miles from the railway station. Who is going to control them? If there were a big market place with a number of big ginning factories and a number of small ginning factories in the outlying district, it would mean that the big ginning factories would be controlled and kept well in hand, so to speak, whilst the small ginning factories out in the districts would be able to do as they like. I do not think that licensing would serve any useful purpose. Even if the small ginning factories were brought under the Factory Act that would not improve matters, as it would still be difficult to control them on account of bad communications. The owners of such factories would probably know two or three days beforehand if there was anybody coming to inspect them and would probably stop working for those days. It may look all right on paper but, in practice, I do not think it would work at all.

5673. I think that the licensing of presses, on condition that the bales were stamped with the names of the press, would ensure that all buyers of cotton would know exactly what they were buying. It has been

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pointed out, I think, by the Bombay Chamber of Commerce that a mixture under ten per cent. is difficult to detect but that the man who presses cotton in which there is a higher percentage of admixture than that or fraudulent admixture of fly and such like stuff must be well aware of it and therefore if the bale were stamped and could be traced back to the press that ought to prevent such malpractices. It has also been stated that there is not sufficient co-operation between the buyers. That certainly is the case. If all buyers were to agree to take steps to stop malpractices, they would stop. I would suggest the licensing of presses, but even there I would make a reservation. Say that I have a press which I use for my own purposes. I am willing to mark my bales with my own trade mark but perhaps I do not want this press myself all the time and I put it at the disposal of outside constituents and then I have got nothing more to do with it. All I undertake to do for them is to press. Things would have to be arranged in such a way that any cotton pressed in a particular factory would have to be given a trade mark for each particular constituent. Whatever way things are arranged, it might be possible for the pressing company to keep a record of the cotton pressed so that the ultimate responsibility did not rest upon the owner of the pressing factory if he pressed on commission.

5674. I should think that Broach cotton could be improved if proper seed selection were resorted to.

5675. The area under Cambodia has largely increased this year and I have been told that in tracts east of Virudupatti, where Cambodia was never grown before, the cultivators have been growing it mixed with Tinnevellys. The excuse is that in case one fails the other may succeed. I would like to prevent Cambodia standing on the ground for more than one season. It is difficult to suggest a remedy. The matter is one for the Agricultural Department. To discuss such questions as these I have suggested that the Agricultural Department and seed unions should invite representatives of the cotton trade to their meetings once or twice a year. I had in my mind the experience that I had in the Central Provinces where these seed unions were being started partly independently and partly in conjunction with the Agricultural Department and the complaints I heard here afterwards from the officials of the Agricultural Department about the failures they had met with owing to insufficient response on the part of the trade. I thought that it would help to improve matters if the cultivators and the official bodies, if there are any acting on the cultivators' behalf, were to discuss certain points with the people who take up the produce, that is the buyers. So that if the Agricultural Department or the seed unions or other bodies were to base their action on wrong conclusions, they might be corrected where this is feasible by the buyers, who, after all, are in better touch with the ultimate consumers of the cotton than perhaps the Agricultural Department and certainly the seed unions or such bodies. I want co-operation between them.

5676. In places like Berar which are overrun with presses, it would be unfair if there were no pools. It would mean that every year a great number of factories would be working at a loss, particularly such factories as had no choice and had to work even if they preferred to close down. Some of the factories were put up purposely for sharing in the pools. There are pressing pools in Berar with pressing rates of Rs. 4 or Rs. 4-8 which I do not think is excessive. The ginning rate there now is, I should think, about Rs. 3-8 per *bhoja* of 280 lbs. The ginning rate in Virudupatti is Rs. 7 and at Nalatinpattur is Rs. 6 per *khandi* of lint. It is the cultivator who has to pay for these heavy ginning charges. In order to enable the cultivator to get a proper price for his cotton, there should be some check on pool charges. As to what would be the fairest way of giving the pools a reasonable profit, it is very difficult to say. As things are at present, the cultivator has not been losing money. As far as my experience goes the prices of cotton for the last eight years have constantly been going up with the exception of 1914, after the outbreak of the war, and 1911. If due consideration were paid to the particular circumstances, I should certainly give the central body power to fix the maximum rates.

5677. (Mr. Roberts.) Broach, Surat and Navsari are certainly not the same style of cotton. Navsari and Surat are the same style, differing only in staple. Owing to deterioration, Broach is quite a different style now. Speaking from memory, I think the difference in the staple of Surat and Navsari is about three millimetres, i.e., about one-eighth of an inch. The difference between Company No. 3 and ordinary Tinnevellys is between two and three millimetres, that is on an average about one-eighth of an inch. The difference in price between Surat and Navsari is at least Rs. 50 per Bombay *khandi*. I do not think the difference between *karunganni* and Company No. 3 in price is as much as Rs. 50. Surat and Navsari are silky and long staple cottons and clean whilst Broach contains a certain amount of leaf, is rough in comparison and shorter in staple.

5678. Rs. 15 to Rs. 16 per *khandi* is all that we have been able to realize as premium for Company No. 3. I think that is a sufficient premium according to its intrinsic value. I do not think it will fetch more when trade conditions get better.

Mr. S. DOUCAS, Agent, Messrs. Ralli Brothers, Tuticorin.

EXAMINED AT TUTICORIN, MARCH 11TH, 1918.

No written statement was submitted by the witness.

5679. (President.) I have been eighteen years in India, out of which I have spent two-thirds in this district. I have had some experience of Berar but was not stationed permanently there. I was there only just for a season. I have also been two seasons at Delhi, one season at Cawnpore and two seasons at Nagpur. I have known the local cotton for a number of years.

5680. I saw Cambodia introduced: that was over ten years ago. I think Cambodia has deteriorated in strength as well as in colour for want of selection of seed. It is still an extremely good cotton but it is not as good as it was. Better Cambodia in point of class and staple is grown in the Coimbatore than the Tinnevely district owing to climatic conditions and the suitability of the soil of the former. If the Agricultural Department were to take the same steps with Cambodia as they took with *karunganni*, I think it would be a successful line of work. There should be selection of seed and development of seed farms and seed unions. I have been told that it took the Agricultural Department about eight years to get sufficient seed of *karunganni* to produce about 6,000 bales. A similar line of work on Cambodia would certainly be advisable.

5681. The Agricultural Department has much improved the style of *karunganni*. I consider Company No. 3 is better than Company No. 2 in point of class and staple. I have not handled Company 3-A yet. That line of work is quite satisfactory from the point of view of the trade.

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5682. There is now a separate forecast for Salems, Cambodia and Tinnevellys. That is an improvement. The crop of Salems is very small.

5683. (Mr. Roberts.) In my opinion, it is preferable to have open markets as in Berar. I prefer that system because all the firms can go to the markets and see for themselves instead of buying on forward contracts. If one buys from strong reliable sound dealers, there is no harm. So far, we have not had any difficulty in getting delivery of cotton from such dealers even when the market went against them but I prefer the system in Berar. At present, I contract for a certain quality but I do not know whether that quality will be delivered to me or not because the dealer may not be able to give it on account of unseasonable rains or owing to weather conditions generally. If I contract in the month of December for "fully good fair cotton," and "fully good fair cotton" is not available during the season then my firm has to suffer and to pay certain penalties, whereas if they based themselves on what I saw, they would always be on the safe side.

5684. Company No. 3 is a very good cotton and is much better than the Company No. 2. It is as good as Cambodia in point of staple and class. It is much better than ordinary Tinnevellys. I have heard that it can spin up to 44s. We were buying it the first year and paying a premium of Rs. 15 to Rs. 16 per local *khandi* for it, that is Rs. 20 to Rs. 22 per Bombay *khandi*, but now the premium has been reduced to Rs. 5 to Rs. 8 per Bombay *khandi*.

5685. (Mr. Wadia.) There are two styles of Tinnevelly cotton, "*upnam*" and "*karunganni*." Mixing depends on the firms. Rain damaged cotton will, of course, be sold on its merits. We have got good cotton openers here and when rain stained cotton is passed through such openers, the stain opens and becomes fainter in colour. All damaged and inferior cotton pressed in the Tinnevelly District is passed through openers, but not the sound cotton which is pressed as it is. I am under the impression that all the firms here have got cotton openers. The only thing is that our cotton is likely to be spoilt by the smaller factories which are being put up all over the district. There are small capitalists who are putting up such factories with the idea of making a large profit on a small capital. They are not particular about keeping their gins in order or about having *kapas* openers and there is no particular supervision of the factories. The result is that good cotton gets mixed in the gin house with oily and dirty cotton which mixture affects the class. It may be asked why do we not refuse to take delivery of such cotton. We cannot always refuse it on account of competition. If I refuse it, somebody else will take it. We have men to select the *kapas* in the factory premises and all damaged and inferior *kapas* is rejected and no money is advanced on it. I know that the rubbish that falls through the cotton opener is sold to dealers. They pick up the best part of it, mix it with hand ginned cotton and dispose of it. There is no other mixing. The quality of hand ginned (*churka*) cotton which comes is very small—only eight to ten thousand bales a year.

5686. For the last two or three years, I have noticed that much adulteration with seed has been going on. I think that some steps should be taken to stop these malpractices. Crushed seed and whole seed are often put in purposely in the case of hand ginned cotton. In the case of machine ginned cotton, I do not think that it is done purposely. It is due to the bad setting of the gins. It would be much better if the smaller ginning factories were placed under the control of the Agricultural Department. I mean by small factories those which have only up to six gins. The big factories are in charge of first class engineers, whereas the small factories are in charge of only fitters. No man should be allowed to erect a factory until complete plans with full details in regard to the number and kind of gins, whether double or single, the kind of engine and the kind of opener have been submitted to the Agricultural Department and approved by it. Such factories ought to be placed under the supervision of the Agricultural Department. It would not be fair to place only the small factories under the Agricultural Department and not the big ones. I think that the owners of big factories would not mind placing their factories under the Agricultural Department. It therefore comes to this that all factories must be put under the Agricultural Department. I would prefer that the small factories should be under the Agricultural Department rather than under the Factory Act.

5687. (Mr. Hodgkinson.) We sell only on types of course on our own types. We do not make up fresh types every year but we may add new ones of our own according to the qualities available each season. If the crop is damaged in quality, we have to take delivery of the best quality we can and ship it. We have got types for both good and inferior qualities. If the quality of the crop is good, we sell on the good quality types: if the quality of the crop is damaged, we have to sell on types of inferior qualities. We have got a range of types. Our object is to ship the cotton according to our types. In the case of forward buying, when the market is advancing and against the sellers, they sometimes try to pass off inferior cotton under their contract. It depends on the Firm whether it is accepted or not.

Mr. S. SHIOTA, Agent, the Japan Cotton Trading Co., Ltd., Sattur.

EXAMINED AT TUTICORIN, MARCH 12TH, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(a) "Deshi" short staple cotton.

5688. (1) Experience.—I have been stationed at Tuticorin, Virudupatti and Sattur in the Tinnevelly, Madura and Ramnad districts about two years staying sometimes in each place.

5689. (2) Varieties.—Originally, no short staple cotton existed in these districts. But several years ago, a variety of short staple cotton called *pulichai* or *jari* was introduced from Bengal side.

5690. (3) Size of holdings.—The Government of Madras, during the last two or three years, have taken very drastic measures to put a stop to the cultivation of this *pulichai* or *jari* cotton and are still endeavouring by all possible means to secure the entire uprooting of this variety. Consequently no figures can be given.

5691. (4) Yields and profits.—The average yield is two to three *pothis*, equivalent to about 500 to 720 lbs. but to no advantage as this cotton is not marketable; the firms having stopped buying this variety by an arrangement amongst themselves.

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[Continued.]

5692. (5) Rotations and manures.—Cotton and food-grains are cultivated in alternate years. Ordinary cattle manure is applied.

5693. (6) Comparative returns.—Though the staple is short, the ginning outturn for this short staple cotton is better than Tinnevelly (*deshi* long staple cotton). The outturn is poor as compared with exotic cotton (American or Cambodia).

5694. (8) Uses of seed and seed selection.—The seed is used only for cattle food, and the cultivation having been stopped, no seed is kept for sowing; the Government have even burnt all the seeds available by purchasing from the agriculturists.

(b) "Deshi" long staple cotton.

5695. (11) Varieties.—Tinnevelly or *upnam* and *karunganni* are the varieties grown in this district.

5696. (12) Size of holdings.—They say about sixty per cent. of the whole cultivated area is under cotton; out of this, 54 per cent. is under actual cultivation of all varieties of cotton, but no exact figure can be given.

5697. (13) Yields and profits and comparative returns.—*Upnam* or Tinnevelly varieties yield about two *pothis* equivalent to about 500 lbs. *kapas*. The *karunganni* variety yields about 1½ *pothis* or about 420 lbs. *kapas*. The *karunganni* variety produces a better outturn in ginning and, having somewhat longer staple than *upnam* or Tinnevelly varieties, commands a profit of about Rs. 5 to 10 per *pothi* of 240 lbs. *kapas* over *upnam* or Tinnevelly varieties.

5698. (15) Conditions affecting increase in area.—The cultivation of this long-staple cotton is being done from time immemorial, and as such all available area has already been cultivated. There cannot be any increase unless people do not care to cultivate some food-crops every year.

5699. (16) Suitability of existing varieties.—Generally right types are now being cultivated and the Government are now experimenting with the cultivation of *karunganni* variety at their farm in Koilpatti with a view to improving the staple of *deshi* long-staple cotton.

5700. (17) Prevention of mixing of different varieties.—We highly appreciate the endeavour of the Government of Madras and the methods adopted by them in connexion with the improvement of long staple cotton and eliminating of short staple variety. The strong attitude of the buyers in co-operation against the short staple will put an end to the cultivation of that variety.

5701. (18) Uses of seed and seed selection.—The seed is used for cattle food. Some time back some were exported to Europe for extracting oil. Seed selection is practised by holding back best dried *kapas* of first picking and then hand-ginning it.

5702. (19) General economic conditions.—The agriculturists are always in such a condition that they have to borrow money from capitalists at high rate of interest for dealing in cotton and seed, etc. Consequently co-operative agricultural banks, lending money at a reasonable rate of interest during the ploughing season and at the picking time, etc., will be a great boon to them.

(c) Exotic cotton.

5703. (21) Varieties.—Cambodia or otherwise known as American is the variety grown at this tract.

5704. (23) Comparative returns.—This variety grows by irrigation in red cotton soil unlike the *upnam* or Tinnevelly, which are cultivated in black cotton soil. The acreage cannot be definitely stated. But it is on the increase year by year.

(2) The ginning outturn of this variety of cotton is better than that of *deshi* long-staple cotton, i.e., Tinnevelly, by about eight per cent. and equal to that of *karunganni*. The yield is equal to that of *karunganni* cotton.

5705. (24) Rotations and manures.—Most of the plants of this variety are cultivated every year, but less than about 35 per cent. of the plants are kept for about two years, despite the deterioration in quality.

5706. (28) Importation of seed.—No experiments of imported seed have been made. It is very desirable to get seed imported from Egypt and America and try it.

II.—COMMERCIAL ASPECT.

5707. (30) Local trade customs.—In these districts, the farmers do not bring *kapas* to the factory directly, but there are some middlemen, who style themselves as cotton dealers and who act as intermediaries between the firms and the farmers. These make advances to the farmers according to their financial resources, and make contracts with them for small quantities. Then they, in their turn, sell in lumps to the firms and thus have the cotton marketed. These middlemen sometimes sell and buy and *vice versa* and thus taking the risk of the market on themselves. The business between the dealers and the firms is generally transacted in forward contracts for delivery in about two or three months.

5708. (31) Standardization of commercial names.—The commercial names of the various grades of cotton are—

Tinnevelly	.	.	.	.	.	From Madura, Ramnad and Tinnevelly districts.
Upnam	.	.	.	.	.	From Trichinopoly and Coimbatore districts.
Karunganni	.	.	.	.	.	From Ramnad and Tinnevelly districts.
Cambodia or American	.	.	.	.	.	From Madura, Ramnad, Tinnevelly and Coimbatore districts.

These are known by their respective names given and there is no need for any change.

III.—STATISTICAL.

5709. (33) Improvement of cotton forecast.—The forecast, which is being published, has not found its way into the hands of the traders. The same is more or less an official record for Government only. It is suggested that figures, such as acreage, yield, etc., may be collected for each *taluk* separately and published from time to time during the cotton season.

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Mr. F. J. STANES and Mr. W. E. WINTER.

IV.—MANUFACTURE.

(a) Ginning and pressing.

5710. (36) **Type and number of gins and presses.**—Our factory with thirty double roller gins is in course of construction ; besides, we have engaged 48 double roller gins and two hydraulic presses.

5711. (41) **Condition of cotton.**—Very often the ryots bring bad *kapas* and cotton mixed up with good stuff with a view to get the full price for good quality. But owing to the keen competition among the firms, it is difficult to prevent it.

V.—GENERAL.

5712. (46) **Attitude of buyers to improved cottons.**—Actually a premium of Rs. 10 to Rs. 16 has been paid per 500 lbs. cotton over Tinnevely for *karunganni*, which is usually long-staple cotton.

5713. (47) **Effect of water rates.**—In these districts, no water-rate is charged as cotton is cultivated in black cotton soil.

Mr. S. SHIOTA called and examined.

5714. (President.) My experience has been confined to this tract except that I was in Khandesh for a very short period. Japanese are the biggest consumers of Indian short staple cotton. They also buy long-staple cotton. The bulk of the long staple cotton used in Japan comes from Broach. All the cotton I buy in India I export to Japan. I buy to suit the requirements of the mills in Japan. I send cotton to Japan on types which we have there. We send pure cotton to Japan and do not mix ; my firm sells in Japan. We are only commission agents. Our purchases depend on the demand by the Japanese mills. We buy and sell at our own risk.

5715. I do not wish to add anything to my written statement except that I should like to see some effort made to stop Cambodia being kept on the ground for more than one year. This practice should be stopped as it spoils the cotton.

5716. I should also like some arrangements made to finance the ryots, who are now in the hands of the moneylenders. In Japan, there are many banks which finance the cultivators. The establishment of co-operative societies is encouraged in Japan.

Mr. F. J. STANES and Mr. W. E. WINTER, Directors, Messrs. T. Stanes & Company, Limited and Coimbatore Spinning and Weaving Company, Limited, Coimbatore.

EXAMINED AT COIMBATORE, MARCH 15TH, 1918.

Written statement submitted by Mr. F. J. Stanes.

II.—COMMERCIAL ASPECT.

5717. (30) **Local trade customs.**—Cotton in this district is purchased entirely from middlemen, who in some cases own ginning factories. They obtain their supplies from cultivators or smaller dealers who in many cases are under advances to them. Forward contracts are becoming increasingly the custom here and it is estimated that nearly one-third of the crop to be harvested in March, April and May has already been sold by these middlemen.

5718. (31) **Standardization of commercial names.**—The commercial names of the various grades of cotton with which I am best acquainted are as follows :—

(1) Cambodia, (2) *Uppam*, (3) Thayampaliam Bourbon, (4) Chennimalai Bourbon, and (5) *Nadam*.

The first two cottons are grown largely in the Coimbatore District, but also grow well in the Tinnevely District, whilst Thayampaliam and Chennimalai Bourbons are grown in the districts between Erode and Dharampuram. The present commercial names of all cotton in India might be altered with advantage to customers and dealers by adding the name of the local district in which the cotton has been grown, such as Coimbatore Cambodia, Pollachi Cambodia, or Coimbatore *uppam*, Pollachi *uppam*, Tinnevely *uppam* and so on. The same cotton and from the same seed often grows better in one district than in another.

IV.—MANUFACTURE.

(a) Ginning and pressing.

5719. (36) **Type and number of gins and presses.**—We use double roller gins by Platt Brothers, Limited, and have thirty such gins working at our Palladam factory.

5720. (38) **Saw gins versus roller gins.**—We have had no actual experience with saw-gins, but understand that they were the type of gins introduced when machine-ginning first began in this district. No doubt the saw-gin turns out a better quality and cleaner lint than a roller-gin, but it plays havoc with the staple because the crop comes in and ginning is in full swing during the hot weather ; consequently the staple is very dry and brittle, so that it is easily strained and damaged in a saw-gin. Assuming that saw gins are the best type of machines for the long stapled Cambodia and Bourbon cottons, it would not pay to use them unless the air of the factory was rendered humid enough to strengthen the staple sufficiently to avoid breakage.

5721. (40) **Factory labour.**—We have not experienced any difficulty in obtaining labour.

5722. (41) **Condition of cotton.**—The *kapas* usually arrive badly adulterated with inferior cottons and diseased *kapas*, which has to be picked out to some extent in the factory. This could be avoided, if picking in the fields were to be properly supervised by the ryot or some responsible person.

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[Continued.]

(b) Spinning and weaving.

5723. (44) **Condition of cotton.**—The condition in which cotton reaches our mills is very objectionable indeed in many cases, and this question, we consider, is the most important under this heading for, if proper action is taken, it would be the means of improving Indian manufactured cloth both in hand and power looms. Our chief objection in local cottons such as Cambodia and Bourbon is broken seed, which is due, in our opinion, to bad ginning, improperly set gins, gins in bad repair and ginning the *kapas* before they are well dried. Broken seeds in cotton are the greatest pest a cloth manufacturer could have, because like *nep* they cannot be got rid of in the course of manufacture and appear in the cloth when woven, giving it a very dirty and specky appearance. *Nep* is also very common in the above two named cottons, and this again is due to improperly set gins. Another great objection, which we have to make about the way the cotton reaches us, is that of mixing inferior grades with better grades to improve the average of the delivery. Sometimes we find Cambodia adulterated by *uppam* to give it a better colour, whilst it is a very common practice for dealers to mix *nadam* with Bourbon cotton also to improve its colour. *Nadam* and *uppam* cottons are very white but short in staple and are of cheaper grades than Cambodia or Bourbon and they are very often used for improving the colour of longer stapled cotton, at the same time bringing in more profit to the dealer. The remedies for the above two objections is the Government control of all ginning houses, for some ginners are the greatest “mixers” and are also the men who break the seeds and introduce *nep*, for in many cases the ginner is the middleman between the ryot and consumer. Where the ginner has no further interest in cotton than that of ginning it, the quality is of the best, but where the ginner is also the cotton merchant, it is very often the opposite. Until the ginning houses are controlled to see that each quality is kept separate and that the gins are kept in good order, we cannot expect any improvement in the condition in which cotton reaches our factories. As owners of a ginning factory, we are quite in favour of Government control.

5724. (45) **Effect on cotton market of replacement of short staple cotton by long staple.**—On the whole, short staple cottons in India have the best colour and these are used in cotton mills purely for blending and not for strength. If long stapled cotton is going to increase largely and short staple supply decrease, the demand for cottons of good colour is bound to increase, whilst the supply of same has decreased, hence we think that the price of the cotton will go up, whilst the rates for long staple will remain the same or go down seeing that supply has increased. In our opinion, the long staple cotton grown in India has seriously deteriorated on the whole, whilst the short staples, which are indigenous, have not altered in quality for ages. Cambodia cotton some five years ago was an excellent quality and equal to good middling American, but to-day this cannot be said of it. It is more or less stained and full of impure and unripe fibre with a dull colour. We think that if more attention was paid to the improvement of the indigenous cottons of India, better results would be obtained than those now obtained by Government from long staple cottons.

V.—GENERAL.

5725. (46) **Conditions of buyers to improved cotton.**—Our experience has been that buyers have been prepared and have paid higher rates for improved cottons, and cotton of good colour free from any impurities such as stained unripe fibres, broken seeds and leaf and of good staple will always find favour with any exporting firms or manufacturer in the district provided such is available in commercial quantities.

5726. (47) **Effect of water rates.**—We consider that the water rates charged have an effect on the cultivator's preference for a particular crop in so much that the water rate is a standing expense and it is on this expense and market rates for his produce that he decides on what to grow. Water rates and market value of produce are the two factors by which he must determine his produce whether cotton, paddy, or wheat.

5727. (48) **Desirability of alteration in water rates.**—We consider that changes are called for in the schedule of water rate at present in force for the reason that one crop requires much more water than another crop does, and a schedule should be prepared on a basis of a crop that requires the most or the least water.

Mr. W. E. WINTER called and examined.*

5728. (Mr. Wadia.) I am a Director of Messrs. Stanes and Company. We have spinning and weaving mills in Coimbatore with 47,000 spindles and 370 looms. We have two spinning mills, one old and one new and we are also running the Mall mills which are started by some Indians here, but did not do very well and so we took them over. The bulk of our production goes into weaving yarn. We use Cambodia, Thayampaliam Bourbon, Chennimalai Bourbon, Westerns and various grades of short staple cotton from the Bomlay side. During the last five or six years, deterioration has occurred mostly in the staple and strength of Cambodia. Thayampaliam Bourbon is an excellent cotton still. Its staple is one inch. It is really a very fine cotton, very good to handle and spins excellently. It is mostly grown on the Dharampuram side. It seems to me to be a cotton which has a strong test for that particular district. Unfortunately the quantity of that cotton as compared with Cambodia is very small. We could buy up all that is cultivated. I think we take the bulk of it. We have not been able to understand why that cotton will not grow elsewhere. It is a dry crop cotton. There is nothing much in Chennimalai Bourbon cotton.

5729. The deterioration in Cambodia is in staple, colour and strength. The staple is not nearly so long as it used to be. The strength is also very much less than it used to be and the colour seems to have deteriorated. We have a sample of Cambodia grown on the Agricultural College farm here, in my office now. It is a most excellent type of cotton. I showed it to a dealer about six months ago and he said that I would never see that type again.

5730. We buy lint. We do not buy *kapas* so that we do not see cotton in the form of *kapas* here. We have a ginning factory at Palladam with about thirty gins where we get *kapas* but we do not actually buy it. The dealers merely bring the stuff to us to be ginned and we are simply ginners. The cotton belongs to other people. If we see good cotton, we may buy it for ourselves but we buy very little indeed from that ginning factory. It is purely and solely a ginning factory. We are not there to care for and look after cotton.

5731. The ginning percentage of what we call A. I. Cambodia is 38 per cent. and that of A. I. No. 1 cotton is 34 per cent. Irrigated Cambodia is decidedly better than unirrigated. That is one of the great points with this cotton. Cambodia is not a dry crop. Attempts to grow it as a dry crop have, in my opinion, caused failure in the strength and staple of the cotton. The cotton needs both irrigation that will reach the roots,

* Owing to Mr. Stanes' absence from Coimbatore, Mr. Winter was examined on his written statement.

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[Continued.]

and rain to ripen the fruit. If the east breeze continues too long for the young plants, it withers them whereas when the south-west breeze blows, there is a certain amount of moisture in that which helps the growth of the plant, so that we have climatic conditions to contend with as well as the question of growing the cotton on dry or wet land. Pollachi Cambodia is one of the best cottons, and, of course, Coimbatore Cambodia is good. That is largely due to the fact that Pollachi is right in the mouth of the Palghat gap through which the south-west monsoon wind blows carrying a great deal of moisture. Salem and Karur Cambodia are only medium types. The difference between A-1 and No. 1 is that the former is fully one inch in staple and the latter is from seven-eighths to one inch. The difference between the cotton grown round Salem and Karur side area and that grown round Coimbatore and Pollachi cotton is nearly one-eighth of an inch. As regards spinning tests, with 20s counts tests for breaking strains, A-1 spins 60s to 70s counts. With the cotton from the College farm, we might go up to 80s counts. A-1 quality as well as the cotton from the College farm loses as low as three per cent. in the blow room whereas medium quality loses as much as eight per cent. The average is about five per cent. We gain a tremendous lot by getting a really good class of Cambodia cotton as the blow room loss is so much smaller.

5732. Lint comes into our hands in various degrees of purity. I mean that it is all according to price. Men bring us a sample about two pounds in weight which we examine. If that is clean, free from leaf, stain or ill bred stuff, we pay a better price than if it is not clean. The bulk of cotton comes in badly picked and full of leaf and mixture. All these things could be dealt with and cotton could be handled in a much cleaner manner if things were controlled. We have paid five per cent. premium for the better stuff. What we have offered and what we have actually paid is Rs. 10 per *khandi* of 500 lbs. in order to get good clean cotton. If cotton were at Rs. 200, we would offer Rs. 10 more if good cotton were given to us. We have actually done so for the express purpose of getting good cotton for higher counts. We as a firm have paid more and are prepared to pay more for cotton with a good staple and good colour.

5733. We do not find deterioration in other qualities of cotton besides Cambodia. Bourbon is still the old type. Uppam is still the same. We have not touched *karunganni*. There is no *karunganni* in the district. We buy all our cotton from this district. It does not pay to bring *karunganni* up here. I see no reason why *karunganni* should not be sown in this district as a dry crop. If you could bring *karunganni* up here, we would take up all that we could get as it is really a very fine cotton which suits our mills excellently. Khandesh cotton is very much cheaper than *karunganni*. We do not bring it from Khandesh but buy it in Bombay. We only buy that kind of cotton when prices are in our favour. The ginning percentage of *karunganni* is 28 per cent. This is ten per cent. less than the very best Cambodia. We can therefore do with that. The *kapas* of *karunganni* is Rs. 150 per *khandi* as compared with Rs. 160 in the case of Cambodia. The staple of the *karunganni* which I have seen is about seven-eighths of an inch so that it is very good stuff. I see no reason why the Agricultural Department should not grow it here. I consider Northerns a very good cotton indeed. We have used it, but not for the last three years, so I cannot say whether it is keeping its quality. Westerns are all right but they are getting dirtier than they were. They are marketed very badly indeed and we have had machine ginned stuff which lost 27½ per cent. in the blow room. We have therefore decided to buy as little Westerns as possible.

5734. As to whether the deterioration that takes place is due to wilful manipulation by ginners or is due to bad picking, I am only acquainted with cotton ginned in the district and so far as I can gather from the cultivators what happens is this. The small holders sell their cotton to small buyers who buy ten *khandis* here, five *khandis* there and two *khandis* somewhere else. The ten *khandis* might be excellent cotton whereas the five and two *khandis* might be very bad but the buyer mixes the whole lot together and takes it to a ginning factory to be ginned. The mixing occurs, as far as I can gather, between the gin and the ryot, i.e., it is done by the small middleman. I see no reason why the small middleman should not be done away with. If he could be done away with, I believe the ryot would benefit and so would the manufacturer. I do not believe that mixing is done so much in the ginneries which are ginning solely for profit. One middleman I know has three ginning factories. His sub-agents buy small lots of different kinds of cotton and bring them to his ginneries where they are all mixed. Then, again, the ryots ask the gin owners to give them a good outturn and promise to bring *kapas* to them if they will do so. There are so many small gins which are competing with each other. Everyone who can afford it puts up a small gin and sometimes we pick out cotton in the mill which is very badly adulterated with seed. In my opinion, this is done either to give weight to the ryot or to get weight from us.

5735. I cannot say that I really know the Berar market system though I have heard of it and understand that there is a central municipal market where carts of *kapas* come and are sold by open competition. I have suggested to a Collector (Mr. Hemingway) that markets analogous to those in Berar should be established here. I suggested markets at Tiruppur, Dharapuram, Pollachi, Coimbatore and Palladam. We could then establish agencies in those places to buy cotton direct from the ryots as they brought it in and would utilize our ginning factory at Palladam for ourselves. I see no reason why central markets should not be set up. I consider it would be a great boon to us as in that case we should be able to see the cotton we were buying and would pay the cultivator accordingly and he would be able to pay for manure for his ground. The ryot is robbed by the middleman, who does not put anything in the ground and takes no interest in it though he gets all the cream whereas the ryot who is interested in the ground cannot get enough for his stuff and consequently the ground suffers, the plant suffers and finally the cotton suffers. If the cultivator gets a profit, he will put manure into the land, the plant will be benefited and cotton will be benefited. The middleman is the point which we should aim at eradicating, and that is why I would advocate a central market system.

5736. Another way of eradicating the middlemen is the co-operative credit system, though I have not had time to think much about it. The ryot is now under the thumb of the middleman. The middleman advances him money and the ryot is practically enslaved to him. He cannot get free until he has paid up his money. His interest goes on accumulating and the principal is not reduced. Unless you free the ryot from the burden of indebtedness and set him free from the yoke of the middleman, you cannot get anything done. I could not say if the ryot are getting free from indebtedness on account of the high prices of cotton. The high prices have only existed for the last four or five months.

5737. It is true that gins are set badly so as to give a bigger outturn. If I could suggest a remedy, I should probably be doing a great service to India. I cannot suggest a remedy but I certainly think that the small ginneries ought to be controlled by Government in some way. As for ourselves, we have an engineer who is practically a European, who looks after our gins and keeps them well set, and consequently we get a good outturn. Most gin owners employ a low paid man who takes no interest in his work. If you could control these ginneries in some way such as appointing an overseer to see that the ginneries are inspected

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and kept in order and that the cotton is not adulterated, you would be helping the manufacturer. Our firm would have no objection to a system of licensing. As I was on military duty until three or four days ago, I have had no time to go through the evidence given before the Committee and to consider the question of licensing, but personally I think that our firm would not have any objection to the issue of licenses to control ginneries if they were found fraudulently mixing different varieties of cotton. I should say it is rather a good idea. If what is aimed at is the elimination of adulteration or spoiling of cotton, our firm would be most glad to help Government in the matter. I have no objection to making it a condition of the license that the gins should be properly set so as not to allow seed or other extraneous matter to pass through into the cotton. We ourselves endeavour to keep our gins so well set that seed is kept out. Seed which passes through the gin into the lint is most difficult to get rid of. As it is, we have to pass all our cotton through certain machines to try to get rid of leaf. I am not sure whether the leaf in the cotton is the result of bad ginning or the result of bad picking, no doubt bad picking has a lot to do with it. Cloth would fetch two annas more, per yard, if leaf and other extraneous matter could be kept out of it. A certain amount of broken seed comes in long stapled cotton but not so much as in short staple cotton. The major part of the trouble is the leaf that comes in Westerns. I consider seed selection is a remedy against deterioration. I see no reason why Government should not control seed for sowing purposes. How far Government control should extend needs consideration.

5738. All the gins in our factory are double roller gins. We have had no experience with saw gins. Mr. Stanes in his evidence has suggested that humidifiers would have to be used in a factory if saw ginned cotton was to be made to pay. I have had no experience of the effect of humidifiers on saw ginned cotton. The reason why Mr. Stanes suggested their use is that they keep cotton from becoming brittle. We have humidifiers in our mills for the express purpose of keeping cotton from becoming brittle, etc.

5739. As to the question whether long stapled cotton does not get a proper premium on account of its low ginning percentage as compared with short staple or whether it is due to mixing, all I know is that the mixing which goes on in the ginning factories deteriorates the cotton and when cotton is brought to us in a dirty condition we naturally pay less for it. If a man brings us a good sound solid lot of cotton which is unmix and unadulterated, we pay more for it. The remedy lies in stopping this mixing in the ginning factories and the proper premium will come in consequence. There is one point. I think it is the exporters who have caused a tendency to mixing. They seem to be willing to take much inferior cotton to that which we would take for the same class as there is so much competition among them. The exporters to Continent mostly buy cotton on class and not on staple. They pay no attention to staple.

5740. (Mr. Hodgkinson.) We should only get about fifty *khandis* of cotton with a blow room loss as low as three per cent. The average blow room loss of Cambodia is eight per cent. When we get more than eight per cent. blow room loss we penalise the dealer. If Cambodia is properly grown, properly picked and properly ginned, it should not lose more than five or six per cent.

5741. The staple of Cambodia is weak this season owing to north east winds blowing and there being no moisture in the air. It is about one inch in staple. The staple of *upam* is from ½ to ¾ of an inch. The average is about ¾ of an inch.

5742. We never find fly mixed with the cotton we get from Bombay. The fly which we get from our mills we use for our lower counts. We sell very little of it. We used to sell nearly all of it. But under improved methods of manufacture we now use almost every bit of waste we have.

5743. (Mr. Roberts.) I do not think the quantity of Thayampaliam Bourbon cotton which is grown, exceeds 3,000 *khandis*. The quantity of Chennimalai Bourbon cotton is a little more, say about four to five thousand *khandis*. Thayampaliam Bourbon is one inch in staple. Good Thayampaliam Bourbon is over an inch. Cambodia is seven-eighths of an inch in staple. Bourbon is cheaper than Cambodia because it loses more in the blow room. The price of Bourbon is about Rs. 50 a *khandi* lower than that of Cambodia. The blow room loss of Bourbon comes to nine or ten per cent. It is the most varied cotton of all in quality but the staple is always right.

5744. I cannot say that the rule that the higher the ginning percentage the longer the staple applies in all cases. It seems to be so in the particular case of A-1 and No. 1. There is a difference of one eighth inch between them. For staple we should pay Rs. 10 more for A-1 quality than for medium quality for a *khandi* of 500 lbs.

5745. We condemned Mr. Wood's *karunganni* cotton because it was dirty. The *karunganni* which was given to us by Mr. Wood was not the same *karunganni* as that which I saw in Madras. In fact we did not think that the cotton we got from here was *karunganni*. There was not a sufficient quantity to put it to a spinning test. If that *karunganni* could be brought to seven eighths inch in staple in this district, it would be an immense boon. It is really a good cotton and is a dry cotton which is grown on dry land I believe.

Mr. T. G. RALLI, Agent, Messrs. Ralli Bros., Coimbatore.

EXAMINED AT COIMBATORE, MARCH 16TH, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(a) "Deshi" short staple cotton.

5746. (1) Experience.—I have been stationed for three cotton seasons in the Tinnevely District and for the last year at Coimbatore. I am not in direct touch with cultivators.

5747. (2) Varieties.—The short staple variety grown in the Coimbatore District is known as *upam* or *ukkan*, which variety since the introduction of Cambodia (also known as American) has been steadily decreasing to about one-twentieth of the total crop.

(b) "Deshi" long staple cotton.

5748. (11) Varieties.—The mixed variety known as Bourbon-nadam (Bourbon, long stapled, about two-third, nadam short stapled one-third) is grown to a small extent—about one-twenty-fourth of the total crop—on light soils in the eastern parts of the Coimbatore District.

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[Continued.]

(c) *Exotic cotton.*

5749. (21) *Varieties.*—The long stapled variety known as Cambodia (or American) is now generally grown all over the Coimbatore District.

5750. (25) *Conditions affecting increase in area.*—As most of the land in this district is suitable for the cultivation of Cambodia, the decrease or increase in the area under cotton depends almost entirely on the level of prices of cotton as against food crops.

5751. (27) *Prevention of mixing of different varieties.*—Practically no deliberate mixing takes place in this district but only accidental mixing to an unimportant percentage.

5752. (28) *Importation of seed.*—Without excluding the desirability of importing seed direct from America and Egypt for scientific experimental purposes, it may be considered essential to improve by selection the varieties already acclimatised in India, especially with a view to prevent the degeneration of a desirable variety.

II.—COMMERCIAL ASPECT.

5753. (30) *Local trade customs.*—The marketing of the crop takes place as follows :—

The petty dealers buy the *kapas* from the ryots in small villages and bring it to certain market places and resell the same to big dealers or the ryot himself brings the *kapas* to the market and sells the same either through a broker or direct to the big dealers. The big dealers, some of which are also gin-factory owners, buy the *kapas* in the local market either from the petty dealers or from the ryots and the *kapas* is then distributed to the ginning factories. The big dealers sell mostly on contracts, for short or long deliveries, to the buyers who are the Indian mills or their representatives, the local merchants and the exporters. The cotton is tendered, after ginning, in loose by the dealers against their contracts. But some of the buyers arrange to advance money to the big dealers on the security of the *kapas* and cotton deposited against their contracts in the ginning factories.

5754. (31) *Standardization of commercial names.*—The varieties of cotton grown in the Coimbatore District are :

- (a) Bourbon-*nadam*.
- (b) *Uppam* (or *ukkan*).
- (c) Cambodia (or American).

There are so far no special names for the different grades of each variety.

III.—STATISTICAL.

5755. (35) *Publication of Liverpool and Bombay prices.*—I do not consider publication of Liverpool and Bombay prices necessary as these prices are known through the local merchants, who receive direct information from Bombay.

Mr. T. G. RALLI called and examined.

5756. (Mr. *Wadia*.)—I have been three years in the Tinnevely district. In 1912, I was an Assistant at our Tuticorin Agency. In 1914, I was in charge of our Sattur Sub-Agency; in 1915, I was in charge of our Tuticorin Agency and in 1917, and this year I have been in charge of the Coimbatore Agency. I have been in touch with Tinnevely cotton and Cambodia cotton. My experience of Cambodia is that it is the best staple cotton that I have seen in India. I think the staple is deteriorating. It is shorter than it used to be and it is also uneven. As to strength, it is, of course, for the mills to give an opinion. The colour of Cambodia in this district is a little less creamy than it was. The tendency is to become whiter. The ginning percentage of Cambodia has kept at about 33, though, at the very beginning, when it was introduced in the Tinnevely district, I understand it was as high as 40 or 42 per cent.

5757. For the last two years I have not been in touch with the Tinnevely district so I cannot say much about *karunganni*. When I was in Tuticorin two years ago, I considered the staple comparatively better than that of ordinary Tinnevely. We do not buy *upmam*.

5758. I am of opinion that the staple of Bourbon-*nadam* when the percentage of Bourbon is high is better than the staple of Cambodia. Bourbon-*nadam* is grown mixed but in the latter part of the pickings the percentage of *nadam* is always higher because Bourbon is an early maturing variety. We occasionally buy this cotton. The Indian mills usually buy it. I have bought very little this year and I cannot say if it is deteriorating in quality. From the samples I have seen of Bourbon-*nadam* cotton this year, I should say that its staple is distinctly better than that of Cambodia. It can be grown profitably only on light soils in the eastern parts of the district. That is what I have heard from the dealers.

5759. At present the prices of cotton are so high that the area under cotton will increase and that under food crops will decrease. Cambodia and other cottons are marketed in a practically pure state. There is some accidental mixing in the field. On the border of the *upmam* tract, *upmam* is also mixed with Cambodia owing to carelessness in the ginning factories. I do not think it is done deliberately. The ginning percentage of *upmam* is 25 against 33 for Cambodia and besides the seed of *upmam*, when pure, commands a better price than that of Cambodia. I cannot say if the ginners try to gin cotton clean. It depends on the standard of selection of the buyer who takes delivery of cotton. We point out any defects in the gins to those factory owners who are under an agreement with us and they get the gins set right.

5760. There is a lot of forward buying in this district. This year is an exceptional year. So far as our experience goes, we have always been able to get the quality sold forward by the dealers on an average.

5761. (Mr. *Hodgkinson*.)—We sell on type samples. Of course, our types are revised from time to time. Forward selling does not tend to deteriorate the quality under normal conditions. When the conditions are abnormal and there is a big difference in price, the dealers who have sold heavily may be inclined to press tenders of inferior quality. We usually allowance cotton which is inferior to the quality sold. We do not pay a premium for a quality which is above the type but we average the superior tender with an equal quantity of inferior cotton. I am of opinion that the "mutual allowance" clause in the Bremen Arbitration Rules would encourage buyers to give a premium for cotton of better quality than the quality contracted for. I do not know whether allowances have been given to us under the mutual allowance clause of the Bremen Rules as these are matters which are centralized in our Bombay firm. Here we simply receive instructions to ship such and such classes of cotton. If the Bremen arbitration clause were adopted by Liverpool, I think it might tend to attract better cotton to the home market.

Madras.]

Mr. T. TAKAYANAGI.

5762. (Mr. *Roberts*.)—In normal years, I should say the proportion of crop here which is sold forward for long deliveries is about one-half and for short deliveries about one-half. By short deliveries I mean from five to fifteen days, and by long deliveries about two or three months. There is no ready market for lint. There is a ready market for *kapas* which is all bought by local dealers who sell it to the firms, who export cotton, from this district. We usually buy on certain types from the dealers. As a rule, the type on which the dealers sell to us is higher than what his tenders turn out to be; so allowances have to be made or some tenders have to be rejected. If any dealer delivers a lot of better quality, he usually gets a premium for it. It is difficult to select *kapas* to get an exact type of lint. It always pays the dealer to supply a lower quality than the quality contracted for. If he delivers to us higher grades, we can average them with the lower grades delivered by him. When we are buying *kapas* in a ready market, we select it up to our required types and pay accordingly.

5763. Taking the grades to be equal, the price of Bourbon is about the same as that of Cambodia. The staple of Bourbon is better but the quality is lower. Very much depends on the percentage of *nadam* also in the Bourbon. *Nadam* cotton is not grown separately.

Mr. T. TAKAYANAGI, Agent, Mitsui Bussan Kaisha, Ltd., Tuticorin.

THIS WITNESS WAS NOT ORALLY EXAMINED.

Written statement.

5764. *Necessity for seed selection.*—Practically I stayed last season at Tuticorin, as agent of the Mitsui Bussan Kaisha, Ltd., Bombay, and what I have gathered during my stay there, from personal knowledge and inquiry, I jot down here. There are two varieties of Tinnevely cotton in general classification, namely (a) *upmam*, (b) *karunganni*. The former is white in colour, but coarser in staple than *karunganni*. The latter is pure, original Tinnevely cotton, and as compared with *upmam*, it is brighter in colour and more silky and soft in staple. But, at present, the main part is composed of *upmam* and *karunganni* has not yet secured that development and spread which it really deserves. This is owing to the want of proper attention and thorough application on the part of the farmers for the cultivation and the improvement of its seed. In Koilpatti, there is a Government farm, under the supervision of an official from Madras. The object of this Government farm is worthy and commendable, as the underlying intention is to enable farmers to sow pure *karunganni* cotton-seed in order to increase the pure *karunganni* variety instead of the inferior *upmam*. But that excellent object in view is not fully attained owing to the absence of thorough co-operation on the part of the farmers to understand its intrinsic value and their own direct interest involved. Of course, the seeds are sold by the above Government farm at a higher rate, and the cultivators do buy them. The next season the farmers do sow these seeds, but the chief shortcoming, which is much to be regretted, is that when they gather *kapas*, they do not make it a point to get the same ginned and separate pure seeds, which may enable them to sow a good quality again the next season. The farmers, as a matter of fact, on the contrary sell away the *kapas* to the dealers or sub-dealers mixing it with inferior *kapas*, and thus the good intention of the Government farm in Koilpatti comes to be frustrated. It is essential that the farmers should be thoroughly impressed and educated upon the point of not selling out their *kapas* from pure *karunganni* seeds to the intermediary party, but that they should be shown the value of the desirability of separating the seeds from the *kapas* in their own interest before ginning, so that the undesirable and objectionable mixing to the detriment of the *karunganni* variety may come to be stopped and the pure variety may be more obtainable in the market.

5765. *Necessity for more ginning and pressing facilities.*—The one great point, which I have noted, under my experience in the Tinnevely district is the fact that, in points of ginning and pressing facilities, the district is very poorly provided. In fact there are a few gins and presses there, which can be counted on one's fingers. This indirectly reflects adversely on the interests of the farmers themselves, as the gin and press owners on the spot, being themselves the buyers of cotton, there is no wide field at hand for competition and the farmers have to part with their *kapas* to the few monopolists, who secure the advantage. In Virudupatti market, cotton arrivals from eastern and western sides indicate good quality, whereas the inferiority of quality is to be invariably found in the cotton arriving from northern side, and the cotton dealers are in the habit of watering the *kapas* and mixing with sand. Thus inferior *kapas* comes to be mixed up with the superior quality of the eastern and western sides and gets deteriorated as a whole.

5766. *Necessity for work on Cambodia cotton.*—In Coimbatore, Cambodia cotton is obtained. There are two systems of cultivation there, namely, garden and field cultivations. The garden cultivation of cotton depends upon the perennial supply of well water, and even when the monsoon fails, the cultivation can be had; but the field cultivation depends upon the monsoon and its vagaries. From my observation, I find that the garden cotton area is improving as the time rolls on, and in this respect, I wish to suggest the necessity of having a Government farm thereat, just as in Koilpatti, so that good and superior seed may invariably be supplied to the farmers every season to secure the betterment of the quality without fail. The one characteristic feature of the Coimbatore cotton, I have observed is the mixing of more worm eaten *kapas* as compared with other districts. It is essential therefore that this disadvantageous state should be improved by proper remedial measures by finding out the true cause and checking the evil. Cambodia cotton is much used by the Indian and European mills on account of its creamy colour and is nowadays requisitioned in Japanese markets, hence every effort at improving its colour and uniformity of quality will tend to secure a higher prestige and better demand for this cotton, advantageously to the farmers and the buyers.

5767. *Necessity for co-operation between Government and exporters.*—In conclusion, I would say that for the better upkeep and good name of the Tinnevely cotton in general, all the measures which the Government may take will be welcomed to get the quality of the pure cotton improved year by year, so that the evil that has long crept up in mixing the inferior *kapas* with the superior one may be checkmated, and the practice be uprooted later on. For the reputation of Tinnevely cotton, it is much desired that fuller co-operation should be given by the shippers to the Government in all the good and timely measures the authorities may take to attain the creditable object in view.

Madras.]

Mr. CH. A. LIMBOUSSI.

Mr. CH. A. LIMBOUSSI, Agent, Messrs. Ralli Bros., Tuticorin.

THIS WITNESS WAS NOT ORALLY EXAMINED.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(a) "Deshi" short staple cotton.

5768. (2) **Varieties.**—The short staple variety grown in this district was *pulichai* cotton which has now become extinct.

(b) "Deshi" long staple cotton.

5769. (10) **Experience.**—I am stationed in the Tinnevely, Ramnad, Madura and Coimbatore Districts. I am not in actual touch with cotton cultivators.

5770. (11) **Varieties.**—*Uppam*, *karunganni* and Cambodia are the varieties grown.

5771. (12) **Size of holdings.**—The average size of holdings cannot be ascertained. The proportion of the holding is about sixty per cent. cotton and forty per cent. food and fodder crops in normal seasons. Of late, owing to the stimulus of high prices for cotton, the proportion under cotton has gone up to about seventy per cent. of the holdings.

5772. (13) **Yields and profits and comparative returns.**—Average yield per acre is—

247 lbs. *kapas*—56 lbs. cotton for *upam* (Tinny cotton)—23 per cent.

70 " " *karunganni* —28 "

Profit per acre—*Uppam* Rs. 20 to Rs. 26.

Karunganni Rs. 23 to Rs. 30.

Average yield for Cambodia is 412 lbs. *kapas*—137 lbs. cotton—33 per cent.

Profit per acre.—Rs. 29 to Rs. 37.

5773. (14) **Rotations and manures.**—Rotations followed are cotton with *cumbu* (*bajra*) and *chulam* (*juar*). The manures used are excretions of sheep herd, cowdung, ashes, rubbish and silt of tank bed.

5774. (16) **Suitabilities of existing varieties.**—*Karunganni* can be still more largely introduced and grown, replacing *upam*.

5775. (17) **Prevention of mixing of different varieties.**—Necessary steps were taken to eradicate the sowing of the short staple *pulichai* cotton. Present arrangement of penalising the admixture of *pulichai kapas* up to three per cent. and rejecting any tenders of *kapas* containing more than three per cent. *pulichai* is sufficient.

5776. (18) **Uses of seed and seed selection.**—The seed is used for cattle fodder exclusively. No special seed selections is practised except that of drying the *kapas* reserved for sowing purposes. Both hand and machine-ginned seeds are used for sowing.

5777. (19) **General economic conditions.**—Distribution of selected seed must be undertaken by the Agricultural Department. There is now a farm at Koilpatti, where seed of good quality may be stored and distributed through village officers. The poor ryots may be paid advances for properly manuring their fields before sowing. This may be done by establishing more co-operative credit societies in village parts. Ploughing the soil with improved ploughs and using improved weeding plants must be adopted. More facilities to ryots for digging wells may be given so that American cotton may largely be grown.

II.—COMMERCIAL ASPECT.

5778. (30) **Local trade customs.**—The ryots generally sell their *kapas* to the merchants in their own or surrounding villages, who, in some cases, make to the prospective ryots, who could sell them *kapas*, an advance of about fifteen to twenty per cent. of the value at the time of sowing, charging interest until the goods are delivered. These merchants from the villages adopt two modes of selling—

(a) They cart the *kapas* to the nearest centre of ginning factory and sell same there to the merchants in *kapas*.

(b) They trade themselves with the buying firms through the agency of well established cotton dealers in the factory centres. The dealers of the factory centres sell goods on behalf of the village merchants to the buying firms, both for ready and forward delivery, and attend to all the business such as, ginning, weighing, receiving payments against goods delivered, etc., charging a remuneration of about Rs. 2 to 3 per *khandi* of 500 lbs. The lint only is taken delivery of by the buyers and the cotton seed is removed by the sellers and sold at their risk. The dealers in the factory centres generally make advances before the commencement of the season to village merchants according to means and capacity, and charge interest until the amount is repaid by the end of the season to the dealers in factory centres, through whom the village merchants contract generally for forward delivery, the time allowed for delivery varying from two to four months. The sales for ready delivery are comparatively small, as advance on *kapas* would be made by the buyers only on the goods previously sold. In the system of selling for forward delivery, the buyers in the Tinnevely and Ramnad districts have hitherto experienced no great difficulty in taking delivery of cotton even in adverse market conditions.

5779. (31) **Standardization of commercial names.**—The commercial names of the various grades of cotton are :—

Tinny.

Cambodia or American.

The above names are suitable.

5780. (32) **Buying agencies.**—The best form of buying agency is to contract with reliable merchants either for ready or forward delivery.

Bengal.]

Mr. F. W. SMYTH.

III.—STATISTICAL.

5781. (33) **Improvement of cotton forecast.**—The cotton forecast must be published separately—one for the produce of Tinnevely, Madura and Ramnad districts and one for Coimbatore district. Such forecasts will be more useful.

5782. (35) **Publication of Liverpool and Bombay prices.**—The daily publication of Liverpool and Bombay cotton prices in up-country markets will only cause excitement and no good purpose will be served.

IV.—MANUFACTURE.

(a) *Ginning and pressing.*

5783. (36) **Type and number of gins and presses.**—The class of gins we use is Platt's double roller. We have four gin factories containing 200 D. R. gins. The class of press we use is two press factories (*viz.*, one Cyclone press by Fawcett, Preston & Co., Ltd., Liverpool, and another by Henry Berry & Co., Leeds).

5784. (37) **Size of bale.**—9 feet 3 inches is the cubical measurement of the bale (the measurements being 4-0-3 × 1-5-3 × 1-7-3).

5785. (41) **Condition of cotton.**—The *kapas* is not properly dried in some cases, and it will be better if it is perfectly dried.

V.—GENERAL.

5786. (46) **Attitude of buyers to improved cottons.**—When *karunganni* cotton was newly introduced, a premium of about Rs. 16 per *khandi* of 500 lbs. was given and thus *karunganni* was largely grown, replacing *upam* cotton.

VIII.—Bengal.

Mr. F. W. SMYTH, of Messrs. Kettlewell, Bullen and Company, Calcutta.

EXAMINED AT CALCUTTA, MARCH 20TH, 1918.

Written statement.

II.—COMMERCIAL ASPECT.

5787. (30) **Local trade customs.**—My firm purchases about 4,000 bales of cotton per mensem for use in the mills under its agency. We buy from cotton dealers in Calcutta and elsewhere, some of whom have their own ginning factories in the growing districts, whilst others act as agents for ginning factories or again merely as merchants. For some of our cotton we only pay after receipt and examination at our mills, whilst for some we pay eighty to ninety per cent. against the railway receipt or bill of lading and the balance after receipt and examination at the mills. We do not advance any money until the cotton has been despatched to us. We buy for ready and future delivery and, in most cases, subject to the rules and arbitration conditions of the Bombay Cotton Trade Association, of which we are members. I consider that the way in which we conduct our buying is that best suited to our requirements.

5788. (31) **Standardization of commercial names.**—The commercial names of the grades of cotton with which I am acquainted are :—

(a) "Comilla" from Eastern Bengal.

(b) "Bengals" from the United Provinces and the Punjab.

(c) "Oomras" from the Berars.

(d) "Nagpur," "Wardha" and "Hinganghat" from Central India.

(e) "Coconadas," "Northens" and "Westerns" from the Madras Presidency

(f) "Tinnevely" and "Cambodia" from Southern India.

(g) "Burma" from Burma.

I cannot suggest any alterations in the commercial names, which are well understood in the trade, and I do not consider it important that the same name should be used for the same cotton from whatever locality it comes.

III.—STATISTICAL.

5789. (33) **Improvement of cotton forecast.**—The cotton forecast for Bengal, in which Province very little cotton is grown, being of small importance, is sufficiently accurate. The consolidated forecast for the entire cotton area of India is published in a most useful form, but its accuracy, in the light of past experience, is always doubtful, the tendency having been to underestimate the outturn. I cannot suggest any improvement other than greater accuracy.

5790. (34) **Improvement of other statistical information.**—The cotton press return as at present published is practically useless, seeing that the returns are obtained from less than twenty per cent. of the presses at work. It can only become really useful to the cotton trade when returns are obtained and published from a large majority of the presses.

5791. (35) **Publication of Liverpool and Bombay prices.**—With regard to the daily publication of Liverpool and Bombay cotton prices at up-country markets, I consider that such publication is inevitable in modern days and not detrimental to the interests of the cotton trade.

Bengal.]

Mr. F. W. SMYTH.

[Continued.]

IV.—MANUFACTURE.

(b) *Spinning and weaving.*

5792. (43) **Counts spun and market for yarn or cloth.**—The counts spun in our mills range from 10s to 24s and our principal markets are the hand-loom weaving centres of Bengal, Eastern Bengal and Assam, and Bihar and Orissa. A fair quantity of our yarn is also sold to Burma.

5793. (44) **Condition of cotton.**—The condition in which cotton reaches our mills is on the whole fairly satisfactory. Some of it is imperfectly ginned and contains a large percentage of leaf and seed, the extraction and cleaning of which causes us much trouble. The remedy for this defect is greater care in the ginning, in which process the seeds should be entirely eliminated. Another defect is the frequent adulteration of the ginned cotton with bunches of unginned *kapas*, which takes place in the pressing, and is either intentional or due to pure carelessness. Other cottons reach us watered, the watering being deliberately done either before or during the processes of ginning and pressing, and I can see no remedy for this reprehensible practice other than making it a penal offence.

5794. (45) **Effect on cotton market of replacement of short staple cotton by long staple.**—The effect on the cotton market generally, if any large proportion of the short staple cotton at present grown in India were replaced by long staple cotton, would be that the price of short staple cotton would relatively rise and the price of long staple relatively fall.

(2) The terms "short staple" and "long staple" are not clearly defined, but I take it that the former includes all the cotton hitherto grown in India, whilst the latter refers to American and Egyptian varieties, which have not up to now been cultivated commercially in this Dependency.

(3) Unless it can be proved that the yield in quantity would not suffer with the replacement of "short staple" by "long staple," I would view the change with great misgiving. The general world-wide scarcity of cotton makes the question of the total yield in weight of the Indian crop one of great importance, and any reduction would tend to raise the price of cotton all over the world. Uses have always been found and always will be found for all the short staple cottons grown in India, and if they were not produced, other cottons would have to replace them. On the other hand, presuming the same yield, nothing but benefit to the cotton trade could accrue from an improvement of the staple of Indian cottons.

(4) During the past few months, we have handled several parcels of cotton sold to us as grown from American seed in the Punjab and Sind. In some cases, this cotton has been eminently satisfactory, comparing very favourably with the best cottons grown from Indian seed, whilst, in other cases, it has evidently been mixed with cotton grown from inferior seed and has thus lost its uniformity and much of its value.

V.—GENERAL.

5795. (46) **Attitude of buyers to improved cotton.**—Buyers have always been prepared to offer a premium for improved cottons.

Mr. F. W. SMYTH called and examined.

5796. (President.) I have bought a fair amount of Burma cotton. We buy some years about 25,000 bales out of the total Burma crop. More has been going home. It is something like Bengals and spins about 12s to 15s. It is not suitable for spinning alone without the help of *Oomras*. It is not suitable for spinning in the rains. It is clean and has a good colour when well picked.

5797. My firm does not pay much attention to the cotton forecast. It has not the same commercial importance as the American. The returns of pressing and ginning are incomplete and practically useless. If they are to be continued, I am in favour of making their submission compulsory.

5798. We get a certain amount of bad cotton, i.e., cotton adulterated with crushed seed, leaf and dirt and waste. *Oomras* are the worst. There is not much adulteration of the other varieties. A good deal of unginned *kapas* is put in or swept in. The better the cotton, the better the ginning, but that does not apply to Westerns and Northerns: they are very dirty. We spin up to 24s. From our point of view, the long staple cotton question is not of very vital importance.

5799. (Mr. Wadia.) We have three mills with 160,000 spindles. We spin from 10s to 24s. We use Tinnevelles and Cambodias for 20½s upwards.

5800. One objection to *Oomras* is the watering that goes on. We buy it here from merchants some of whom have their own gins in the districts. But it is very difficult to get *Oomras* which have not been watered so far as we know. We buy from Akola, Khamgaon, Nagpur and Wardha. We rarely get a parcel that is not watered. The majority of Indian dealers complain that they cannot live unless they water, as everybody does it. The watering is only one or two per cent. I certainly would stop watering by legislation. That is the only way. It is impossible to detect one per cent. of watering.

5801. I think that there is a good deal of mixing of long and short staple cotton. This mixing is deliberately done. It is done in the ginning districts by unscrupulous dealers. If long staple cotton and short staple cotton were not allowed to be mixed together, it would be better for every body concerned and the difference in price between the two would widen. There is not more short staple cotton than there is demand for. I have no objection to long staple cotton replacing short staple provided it gives the same yield, but I think that the total crop of the world should not be reduced whether it be short staple or long staple.

5802. Punjab American came to us this year for the first time. On the samples shown to us, we bought several lots. One or two were very satisfactory, better than actually required for our 24s but we had one or two parcels which were very mixed, long and short staple together. It was all this year's crop. The last parcel had been fraudulently mixed. That was the condition in which it arrived at the mills. We have no up-country agent of our own. We are in touch with a Marwari dealer here who has his own ginning factories in several places and very often buys *Oomras* and Bengals from us on order.

5803. (Mr. Hodgkinson.) I think there will always be a demand for short staple cotton. I am not in favour of long staple cotton being grown in tracts where short staple cotton can be grown. I look at the matter from the Bengal point of view and I do not see why you should interfere with short staple cotton. I would be in favour of increasing the area under long staple cotton in new tracts where it can be grown.

5804. (Mr. Roberts.) We bought Punjab American from Messrs. Ralli Bros. on type. We put it in 22s and 24s. We mixed it with lower grade cotton. Our opinion was that it has a better staple than we ordinarily use and that it was perhaps too good for us. The staple is seven-eighths inch. The first parcel was excellent stuff. It was rather dull grey in colour but the quality was good.

Bengal.]

Mr. P. VLASTO.

Mr. JOHN HOWESON, Director, Cossipore Cotton Ginning Factory.

EXAMINED AT CALCUTTA, MARCH 21ST, 1918.

Written statement.

IV.—MANUFACTURE.

(a) *Ginning and pressing.*

5805. (Preamble.) We have been carefully through the questions issued by the Committee and find that we are competent to reply only to those appearing under the heading of "Manufacture," viz., section IV(a).

5806. (36) **Type and number of gins and presses.**—Our factory is equipped with forty Macarthy single roller gins manufactured by Platt Bros. We have no presses.

5807. (37) **Size of bale.**—Our standard bales contain 350 lb. and are pressed at the Strand Bank Press.

5808. (38) **Saw gins versus roller gins.**—Our opinion of saw gins is that they are apt to destroy the staple of the cotton, whereas we achieve entirely satisfactory results with our roller gins.

5809. (40) **Factory labour.**—We have had no difficulty in obtaining the necessary labour.

5810. (41) **Condition of cotton.**—The condition in which the *kapas* reaches our factory is in no way objectionable.

5811. (42) **Effect on machinery of replacement of short staple cotton by long staple.**—The type of gin used by us is equally suitable either for short or long staple cotton and in order to deal with the latter, no substantial alterations would be necessary in regard to our machinery. This factory handles solely *Dacca* cotton, which is of short staple, and we have no experience of either long or new staple cotton. There is, however, a very much wider and more constant market for Bengal cotton, which is of middling staple, despite its inferiority in colour and general appearance. We should therefore warmly support any measures which might be taken to improve the staple of *Dacca* cotton.

Mr. JOHN HOWESON called and examined.

5812. (President.) My experience is confined to ginning only and to *Dacca* (Comilla) cotton which is all very short stapled and coarse. We gin the *kapas* and sell the cotton either to Calcutta shippers for export to Japan, Italy, Australia and North America or to the local cotton mills. The *kapas* reaches us in a satisfactory condition. It is not much damped: nor is it mixed with dirt. We divide almost the whole output between ourselves and Messrs. Ralli's who have a ginning factory at Chittagong. There is no pool and I think that Messrs. Ralli's and ourselves are the only people who are working ginning factories in Bengal. (There was and may still be a factory at Chandpur but it is not in use.) Of course a certain amount of hand ginned cotton comes on the market, as the seed extracted by the machine ginning process is of no use for sowing purposes. We should be extremely pleased to see long staple cotton which commands a much wider and more certain market, but just at the present moment it is easy to sell short staple cotton locally.

5813. We have forty gins, all single roller gins. We have no press of our own. We occasionally gin for outsiders and either make a small charge for ginning or do not charge at all according to the quality of the *kapas*. In the latter event, we retain the seed, for which there is normally a good demand, in lieu of payment.

5814. (Mr. Wadia.) Comilla cotton could be improved. Our factory is at Cossipore. There has been no deterioration in the quality of Comilla cotton. I should say that the cotton we are handling this year is the finest that we have ever had. On the whole it comes in very clean. The local mills generally buy from us in the rainy season and not before.

5815. (Mr. Hodgkinson.) I should say that the ginning percentage of Comilla cotton is about forty per cent. but it varies considerably according to the district from which the cotton comes. The length of the staple is very short and averages barely half an inch. We handle altogether anything between 60,000 to 100,000 maunds of *kapas* a year which is, I think, about half the total crop available for purchase. Apart from this about 75,000 maunds is ginned by hand, the seed being required for sowing purposes.

Mr. P. VLASTO of Messrs. Ralli Brothers, Calcutta.

EXAMINED AT CALCUTTA, MARCH 21ST, 1918.

Written statement.

5816. **Long staple versus short staple cotton.**—I have no direct agricultural experience. I therefore regret I can express no views on most of the points raised in this connexion. The broad conclusion that becomes apparent from a comparison of the yield of lint per acre, the cost of production and market value of American cotton and the principal growths of Indian cotton is that short staple cotton gives the cultivator an appreciably better return. And so long as this remains a constant and palpable fact, there can be no question of inducing the cultivator to relinquish short staple cotton in order to grow long staple to his detriment. It would be a bad business proposition and one that cannot be advocated with justice.

5817. **Factors necessary for the extensions of long staple cotton** (i) *Agricultural.*—It is, of course, self evident that the extension of the cultivation of long stapled cotton is a matter of vital importance for the Empire as a whole and it is incumbent on India to do everything possible to help in this direction. But this can only be done if the production of long stapled cotton be put on a sound profitable basis. The coincidence of several factors is necessary for this—some physical, some commercial, some moral. Under the first category fall such questions as the adaptability of the soil, the fixation of suitable qualities of the long stapled variety either by importation of foreign seed or the improvement of local strains on Mendelian lines, the measures necessary for ensuring a constant supply of unadulterated seed, the dissemination of better methods of cultivation. All these points come within the scope of the Agricultural Department.

Bengal.]

Mr. B. M. CHATTERJEE.

(2) (ii) *Commercial*.—As regards commercial requirements, I may mention the fact that it is a vital necessity for securing the full value of good staple cotton that the production should be large and of an even running and reliable quality. This has been achieved with American cotton in India but the experiments with Egyptian in Sind were a failure. It is impossible to get full premia for high grades when the supply is fitful and the quality variable. The moral factor is not the least important. Blind conservatism, ineradicable laziness, the ever present tendency to adulterate the quality and condition of the produce, have been and will continue to be for a long time to come the main stumbling blocks against a radical and permanent improvement. Little can be done by official control in such matters—punitive legislation is not to be commended lightly as it often is ineffective or else has detrimental effects by hampering trade unduly. It also lies open to the criticism that it deflects responsibility from the parties who have expert knowledge and who should be diligent enough to protect themselves to officials who cannot be experts and whose interest can only be vicarious. That the trade can protect itself against adulteration is evidenced by the case of *pulichai* cotton in the Tinnevely district. When the ryots realized that buyers were determined to boycott the inferior cotton they very soon gave up their attempts at adulteration.

(3) I may add here, however, that if the cultivator be made to improve his moral tone, spend more in cultivation, work more and worry more and at the same time he finds that he earns less by sales of long staple cotton then it is understandable that he should not be whole-hearted in his efforts to promote its cultivation.

III.—STATISTICAL.

5818. (33 and 34) *Improvement of statistical information*.—There has been a distinct improvement in the accuracy of cotton forecasts during the last two years. In my opinion, one of the best ways for improving returns is to exercise a stricter control over the ginning returns. Native gin owners are often careless in the figures they give but they could be made to realize the importance attached to prompt and accurate information if Government Inspectors be empowered to check the returns submitted with the ginning books and impose fines when any other means of correcting a tendency to negligence or dissimulation fails.

Mr. P. VLASTO called and examined.

5819. (*President*.) We see very little cotton in Calcutta. I was in the Punjab for a year or so. I have done really very little cotton work. Here we mostly buy Comillas.

5820. (*Mr. Wadia*.) I was for a year in Bombay. I have never been a cotton man, so that my evidence is really second hand. My work has been on seeds and wheat. Cotton adulteration is fairly prevalent and widespread. I have seen *kapas* watered. I have seen ginned cotton watered. I have seen *kapas* mixed with lint and inferior cotton mixed with superior cotton. A radical remedy is, I think, hardly likely to be found. I am strongly against legislation and do not agree with those of my firm who have expressed themselves in favour of it. Legislation is bound to be inquisitorial and must either hamper trade or be ineffective. The difficulty is to fix the ultimate responsibility. As regards the proposal that every bale should be stamped with the name of the press at which it has been pressed, that is putting the responsibility on the second line. It is the gin-owner who is the chief culprit. I do not think you can make the pressing factory responsible for the quality of the cotton pressed. I have found that when any body of traders wants to put a stop to anything, they can easily do so and I think that the remedy lies in the hands of the trade which could penalize any goods that were not up to the mark. Otherwise machinery would have to be instituted which might create a good deal of interference with the trade.

5821. Cotton in India is marketed in a dirtier condition than it is in America. There are many reasons for this. The methods of picking have undoubtedly got a good deal to do with it. Damping is frequently resorted to and there is a temptation for the dishonest merchant to mix sand, stones and dirt with cotton. There is a scramble for cotton because the world's crop is short just now, and the buyer cannot afford to be too particular when the demand is so much greater than the supply. I am not an expert and so I could not judge the proportion of mixture in a mixed cotton but I understand that an expert could, for example, tell a mixture of fifteen or twenty per cent. of *deshi* with Punjab American. A good deal would, of course, depend on the kind of *deshi* that is used for mixing.

5822. By improvement of moral tone, I mean an improvement in the cultivator's and the trader's conception of honesty and straight dealing. I do not know whether the cultivator starts by being dishonest but like every one else he likes to make as much as he can. When the inferiority of cotton is due to defective methods of cultivation or of picking, that, of course, cannot be put down to dishonesty. It is merely ignorance or sloth.

5823. (*Mr. Hodgkinson*.) I have experience of exporting cotton both to Liverpool and to the Continent. Before the war, very little Indian cotton used to go to Liverpool; most of the cotton used to go to the Continent. Liverpool used to take rather good qualities on the whole. The low qualities were chiefly taken by Italy, Austria and Germany. A little went to Spain. In the Bremen Cotton Association Rules, there is a mutual allowance clause which does not obtain in Liverpool. It is an advantage to the seller undoubtedly to have arbitration on the mutual allowance clause, but I do not think that the adoption of the clause in Liverpool would of itself attract more Indian cotton to Lancashire. We have received "points on" under the Bremen arbitration in many cases. I think that the Bremen arbitrations were very fair on the whole.

Mr. B. M. CHATTERJEE, Secretary, Bengal Luxmi Cotton Mills, Ltd.

EXAMINED AT CALCUTTA, MARCH 22ND, 1918.

Written statement.

III.—STATISTICAL.

5824. (33) *Improvement of cotton forecast*.—I do not think the cotton forecast at present published in Bengal is accurate—practically no interest herein is taken by the Department of Agriculture. The little cotton we grow in the Province is chiefly grown in the Hill Tipperah and the Garo Hills. It is coarse and harsh cotton and only fitted for mixing in union goods. Recently there has been a demand for this cotton.

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5825. (35) *Publication of Liverpool and Bombay prices*.—The publication of the Liverpool and Bombay cotton prices has great influence in all the Indian markets. At present the prices of cotton are mainly based on these publications.

IV.—MANUFACTURE.

(c) *Spinning and weaving*.

5826. (43) *Counts spun and market for yarn or cloth*.—We are spinning at present in our mills 10s, 12s, 16s, 20s, and 24s for reeling purposes and 20s twists and 40s weft for our own weaving purposes. We sell our manufactured goods entirely in the local market.

5827. (44) *Condition of cotton*.—As a rule, we do not find much difference as to the quality of the cotton between the sample on which the purchase is made and the supply, but the bales on arrival at our mills are found often to contain an excessive quantity of moisture. This is specially so with regard to the variety called "Bengal cotton" which comes from the United Provinces. This excessive moisture is due no doubt to the free application of water in the cotton before baling and pressing. This is done certainly to add more weight by artificial means but this deteriorates the quality seriously. This can be remedied only by Government control coupled with legislation. We also find a good deal of mixing of the different sorts in all our purchases resulting in imperfect grading.

5828. (45) *Effect on cotton market of replacement of short staple cotton by long staple*.—It will not be possible to replace the present yearly production of short staple cotton by long staple cotton to a large extent without seriously interfering with the requirement of the country, particularly in connexion with the coarser goods and those turned out by the hand loom industries. Coarser counts say 6s to 12s which are never spun in Europe are used largely by our hand loom weavers and their manufactured cloths are used very largely by the poorer classes; moreover these goods are comparatively much cheaper. Further the spinning machinery we have in general use in India cannot spin higher than 4s counts. Under the circumstances, long staple cotton cannot be used by us until we can get suitable machinery from England for the purpose. We should also require a more skilled labour for spinning finer yarns. If we really want to increase the output of long staple cotton, we should increase the cotton acreage with a view to export the cotton to foreign countries. I cannot contemplate without serious misgiving the replacement of short staple cotton by long staple cotton. There is plenty of demand for all the short staple cotton that is produced in India. In my view, our activities should in the first instance be directed towards improving the present varieties of cotton produced in the country by the introduction of modern methods of agriculture, then in preventing the adulteration which takes place until cotton is baled, and lastly in bringing about a larger production of long-staple cotton provided one can be quite sure that it will not have the effect either of replacing or of reducing the output of the existing short-staple cotton.

Mr. B. M. CHATTERJEE called and examined.

5829. (*President*.) We are spinners and weavers and buy cotton in the form of lint from merchants in Calcutta. For the lower counts, i.e., 10s and 12s we use Bengals; for higher counts for 20s twist we use Westerns cotton from Adoni, for 16s to 20s reeling Akola and Nagpur, and for 40s a mixture of Navsari, Cambodia and little Northerns. We spin up to 40s. My experience of cotton lately has been that the staple is not quite so good as it was three or four years ago. Whether that is due to excessive rains I cannot say. The staple is weaker as well as shorter not in Cambodia but in Westerns and Tinnevellys. There is no cotton market here. We buy through brokers up country.

5830. (*Mr. Wadia*.) We buy according to sample. We find as a rule that the cotton delivered is not inferior to the sample. We find a lot of moisture in Bengal cotton. I think water is purposely added to increase the weight. If the cotton is kept in a godown for seven or eight days, it loses weight. We lose sometimes about seven and a half per cent. in this way in twenty days. We receive the cotton in fully pressed bales and it loses about twenty pounds in weight in twenty days; that is our experience as regards Bengal cotton but not with cotton from Dharwar. Bengal cotton as a rule is not very clean cotton. By "Bengal" cotton, I mean cotton that comes from Cawnpore and Hissar. We have no agents up country. We buy from local brokers who get samples from dealers up country which they show us and on which we buy. I do not think that watering can be stopped except by legislation. Even if higher prices were paid, it would go on.

5831. The first necessity is that the principal indigenous varieties should be improved. I do not approve of any foreign cotton, such as American, being grown. We bought 165 bales of what is called Punjab American. The staple was good but there was much mixture. The staple was not uniform. We purchased it through a broker here. We buy cotton from Messrs. Ralli Bros., from another Greek firm, Messrs. P. Foro & Co. and from Indian merchants.

5832. We have 37,000 spindles and 651 looms. We submit monthly spinning and weaving returns to Government.

5833. (*Mr. Roberts*.) By "union" goods I mean wool and cotton mixed together. I saw Comilla cotton being used for that purpose in Huddersfield and Bradford when I was in England.

5834. We paid Rs. 66-8 per maund for the Punjab American that we purchased here. We bought it "forward." We bought on sample. When we make purchases on "forward" contract and samples are not available, we do it on the standard terms of the Bombay Cotton Trade Association. They set the standard of type in Bombay. We have no guarantee of purity.

IX.—Imperial.

Mr. H. A. F. LINDSAY, I.C.S., Director General of Commercial Intelligence.

EXAMINED AT CALCUTTA, MARCH 20TH, 1918.

Written statement.

5835. *Preamble*.—The Committee will receive much expert evidence on the agricultural aspects of this question. This note is concerned chiefly with the commercial aspects and in particular with methods of

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marketing, causes which underlie the practice of mixing, safeguards against deterioration, etc. It is obviously necessary to examine these factors closely as they have a material bearing on any estimate of the permanence of improved methods or cultivation.

5836. *Deterioration in Indian cotton and its causes.*—India is essentially the home of short staple cotton. She uses it in her own mills, whose machinery is constructed for the purpose, and exports it to be spun by similar mills abroad. There are, however, limits to the shortness of the staple which can be used even by mills spinning the coarser counts, and for many years past there has been evidence of deterioration in the length of the staple, and a demand for improvement on the part not merely of oversea importers and Indian mills spinning the fine counts, but also of those spinning the coarser counts. Efforts have been made to check deterioration, partly by introducing long staple varieties, partly by improved methods of cultivating indigenous varieties. These efforts, within their limited extent, have attained some measure of success. Unfortunately, however, this success has been discounted by a retrogressive tendency due to perfectly natural economic causes. The cultivation of short staple varieties is too general and widespread in this country to surrender to an experiment which has hitherto only touched its fringes. Instead, therefore, of the long staple gradually superseding the short, as was hoped would be the case, the latter has merely made use of the former to enhance its own declining value. That is to say, the long staple is chiefly utilized to attract purchasers, and bring in better prices, for mixed bales which, if they contained only short staple, would not command so high a price.

(2) The above is, of course, merely a rough survey of the position in its widest aspect. Other factors have combined to produce the same result. Cultivation is still too often careless and unmethodical. The mixing of *kapas* leads naturally to the mixing of the seed and consequently to an irretrievable mixture of staple lengths in the crop as it grows and before it is marketed. Finally, the holdings are too small to produce more than a fraction of a bale, and there is no guarantee that the several parcels which will make up a 400 lb. bale will come originally from cultivators interested in the same variety of cotton.

5837. *The question of sale on length of staple.*—To combat these tendencies in favour of mixing, deep-seated as they are, there is the great and growing demand both for long staple cotton and for bales containing cotton of uniform length. Provision is already roughly made for uniformity of class by Association rule 41, naming the stations from which cotton may be tendered under specified contracts—see also forms of Association contracts. But the length of staple in any individual bale is only provided for, at present, firstly by the purchaser's general knowledge of the usual length of staple of the class of cotton for which he asks, secondly by the sample against which he buys. In America, purchases are made in terms both of quality (colour, cleanness, etc.) and of length of staple—the latter consideration being as important as that of quality and based not on the average length of the staples in each bale, but on the length of the shortest staple.

(2) The American system has been quoted because it is obvious that the purchaser in India would find considerable relief if it could be introduced in this country. At present, as already seen, purchases are only on the basis of quality or class. One problem before the Committee is by some method or other to assist the purchaser in India to discriminate further, not merely between different classes of cotton but also between recognized lengths of staple within the same class. The problem is by no means an easy one. The real competition lies between two demands for long staple cotton—that of the mill, Indian and foreign, for spinning, and that of the dealer who wishes to improve, by mixing, the value of his short staple cotton. Quality *versus* quantity—the struggle underlying almost all adulteration in India.

5838. *The prevention of mixing of long and short staple cotton.*—The special difficulty in the case of the cotton trade is that the moral aspects are indeterminate. It is not merely a question of the fraudulent addition of water or dirt. The Committee have received evidence to show that watering is not so serious an evil as it once was, and the admixture of dirt could be checked by special clauses in the contract, as in the case of wheat. The real trouble lies deeper. On the strict merits of the case, it is no more immoral to mix long and short staple cotton than to mix hard and soft wheat for milling—provided the samples on which the contract is based is a fair sample containing both lengths of staple. For this reason, the writer is very strongly opposed to any legislation directly prohibiting either the mixing of staples or transport by rail obviously undertaken with a view to such mixing. The danger is a purely economic danger, threatening the cultivator as well as the mill-owner and shipper, and to attempt to combat it on moral grounds is merely to confuse the issues. We cannot condemn the practice of mixing as immoral—and at the same time leave it a paying practice. It were better to leave the trade to work out its own salvation. The defect is one of organisation, and only better organisation can overcome it. Let us see if this is possible.

(2) There are four principal interests at stake—those of the cultivator, the petty dealer or *bania*, the broker or *dalal*, and the mill. The gin and press owner is omitted for the present; for convenience, the shipper's interests are included in those of the mill-owner. Now, which is the agent interested in mixing? Not the mill-owner, for he is admittedly willing to pay higher prices for unmixed cotton. Not the cultivator, who is only too anxious to sow the crop which will bring him in the highest returns. Clearly the trouble lies with the middlemen who think they would lose more on their vast majority of short staple bales, than they would gain on the comparatively few long staple bales, if the cotton were sold separately and on considerations of length of staple as well as of origin. How can we make it pay the middlemen as well to stop mixing? In the existing proportion of long to short staple, they will apparently lose as a class—or at any rate they think they will, and prejudice in such matters is strong. The only solution is to encourage the marketing of unmixed long staple cotton by individual dealers, who are both willing and able to do so; and to trust that the sight of the additional profits which they earn will gradually stimulate other dealers to handle this cotton on similar lines and to encourage its cultivation.

5839. *Creation of a Licensing Board.*—The first essential, then, is that the purchaser should know exactly what he is buying and from whom, so that he will be able to return to agencies which have provided him with unmixed bales. This is the point at which the owner of the gin and press comes in. He is the person really responsible for mixing, since the cotton passes through his press. It is true that he is usually merely an agent, ginning and pressing what is given him by the dealers and upcountry merchants. But he knows what passes through his press and, even if he cannot actually check mixing, he is an important factor in any scheme of reform. I venture, therefore, to support strongly the proposal of the Bombay Cotton Trade Association that a Licensing Board should be created, and that no factories be permitted to work save under license of the Board. For this legislation will probably be necessary. The licenses would provide for the marking of bales so that the name of the press would be known, through however many hands its bales passed. Provision would also be made for accurate statistical returns from the presses. The Board would consist of representatives of the trade (both mill-owners and shippers) and Government officers in close touch with the Depart-

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ments of Agriculture and Co-operative Credit. The underlying idea is that purchasers will know from what press a bale has emanated, will ask for bales similarly marked if it contains good staple, and will avoid the mark if it does not. I consider this a very sound proposal, particularly in the fact that it gives fuller scope to natural economic principles and does not try (as more drastic legislation might) to alter or control them. A defect is that it fixes the entire responsibility on the press-owner, who is frequently a mere agent pressing just what is brought to him, and cannot therefore always completely control the mixing of the cotton he presses. He will, however, undoubtedly bring influence to bear on his customers in favour of unmixed ginning and pressing; and his position is so strong that he ought to be able to do this effectually, particularly if a premium is secured for unmixed bales, which we are told will be the case. And he would be all the more willing to assist in the distribution of pure and good seed, and even possibly in the extension of co-operative credit, under direction from the Government officers on the Board, the constitution and functions of which would be (*mutatis mutandis*) not unlike those of the Assam Labour Board, with its control over the recruitment of labour for the tea gardens.

5840. *Imposition of an export cess.*—There are two further suggestions which I should like to offer. In the first place, the Board may have to maintain a staff of inspectors to watch operations at the gins and presses, prevent fraudulent marking, etc. For this and other expenses, income might be obtained by charging an annual fee for the licensing of gin and presses. If further funds were required, say to meet expenditure on seed distribution, demonstrations, bonuses, etc., a small export cess of a few annas a bale might be imposed. In Japan, it is understood that the cess is collected from steamship companies, by deduction from rebates falling due every six months to shippers. This is a simple method of collection and not burdensome to the trade, and might well be applied in India, provided rebates are granted to regular shippers by all shipping companies carrying cotton from India—a point which would have to be verified.

5841. *Certification at presses.*—In the second place, it may be desirable and feasible later on to introduce some method of certification at the presses, on lines which would follow official samples and grading. A certificate would cover a single bale or a series of bales (to be numbered as well as marked with the mark of the press) and would show not merely the class of cotton—Broach, Surat, Bengals, etc.—but also the grade and length of staple. The certificates would pass from hand to hand with the bales and would give a clear idea of the contents. This, however, would mean very careful supervision, and grading according to recognised official standards, and would take time and money to organise. An account of the American system of classifying and grading, quoted from a "Special Agent's" Report of the Washington Department of Commerce and Labour, is attached.

ANNEXURE.

Classification and grading of cotton in the United States.

We quote the following passages from the monograph on the *Packing and Marketing of Cotton* recently issued by the United States Department of Commerce and Labour:—

The classification and grading of cotton is an important, comprehensive, and intricate business, requiring thorough knowledge of the material, long training, skill, and good judgment. Ordinarily those engaged in the business of handling cotton can determine with approximate accuracy the general character or grade, but for the purpose of spinning yarn the judgment of the expert is essential, length, strength, and fineness of the staple being important factors with the spinner. The grade of cotton in the main is determined by the degree of colour and the quantity of foreign matter which it contains, such as dirt, leaf, etc., conditions that are readily recognized upon inspection by the buyer. Length and texture of staple, however, are not given as great consideration in the initial dealings as their importance would seem to require, nor are they considered by the classification committee of the New York Cotton Exchange unless there be a specific request for their inclusion.

In connexion with the subject-matter of this report, the classification and grading of cotton as now performed has special interest and a brief description of methods that obtain may prove helpful in studying the proposition to introduce a new system of grading that will have the authority and stamp of the Government. The difficulties that attend grading are plainly set forth in the report of the Bureau of Corporations on Cotton Exchanges. In Part I of that report, it is explained that the classification of cotton cannot be performed with absolute accuracy; that no two experts would class a large lot of cotton of assorted grades exactly alike, and that the same expert, classing a large lot of cotton twice, probably would not return exactly identical classification. The report continues:

Method of classification.

The classification of cotton is almost entirely by the eye. There are no mechanical means for performing this work. The differences of cleanliness, amount of leaf, and amount of colour are so gradual that it is exceedingly difficult, in classing cotton into the half grades, to determine exactly where each individual bale should be placed. The difficulty increases as the grade of the cotton falls below middling. With the grades of middling and above, it is a much simpler matter to class cotton with reasonable accuracy. What might appear to be very unimportant conditions exert a material effect upon classification. Thus, a passing cloud may easily influence a classer, quite unconsciously, almost to the extent of a quarter of a grade. When snow is on the ground, it is very difficult to class cotton if the light is reflected upon the cotton or into the eyes of the classer. Still again, very few bales of cotton are exactly uniform in character, so that if two small samples are taken from different parts of the same bale they might easily show a decided variation. It is customary in the New York market where two samples are drawn from each bale, to reject the higher sample. Even a single sample of a few ounces, however, may not be absolutely uniform in character. When it is stated that a bale of cotton weighing, say, 500 pounds represents approximately the yield of 2½ acres of land, and that picking, on account of the low grade labour employed, is often carelessly done, it is easy to see how classification based on a sample of only a few ounces may give rise to much dissatisfaction.

Relative value of grades in the New York Exchange.

The basic quality of cotton is known as middling, and all quotations and sales are made on and from that basis. Classification is made and grades are established by a committee of experts employed by the New York Cotton Exchange, and the action of this committee is given recognition by the trade and governs

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all deliveries and sales, whether "spot" or "futures." The classification is made in September and November of each year, and the latter stands good until September 12th of the year next following. The difference in values of the several grades is fixed by the classification committee. The price varies according to the supply and demand, but the values fixed by the committee for grades above and below middling are plus or minus the market price for middling and are permanent for the time being. The differential is established by points, each point being the equivalent of one one-hundredth of a cent. Thus, if cotton be quoted at 10 cents per pound, fully middling, being rated 15 points above middling, would command 15 cents per hundred pounds or 75 cents per bale over a bale of middling. On the other hand, for barely middling, an "off" grade, the price would be 17 points below, or 85 cents per bale less than middling.

The several grades established by the New York Cotton Exchange for the year ended September 1912, and their relative values are given in the table following. The grades above middling are "on" or plus, and those below are "off" or minus the current price for middling, the basic quality. A column is added showing the increased value attaching to the bale of 500 pounds according to the differentials. The price for middling is placed in the table at 12 cents per pound, to which the differential on the basis of each point being equivalent to one one-hundredth of a cent, should be added.

Grades.	Points on (+) or off (-).	Increase (+) or decrease (-) in value of bale.
Fair	+	175
Strict middling fair	+	150
Middling fair	+	130
Strict good middling	+	80
Fully good middling	+	68
Good middling	+	56
Barely good middling	+	40
Strict middling	+	30
Fully middling	+	15
MIDDLING (12 cents per pound)	...	...
Barely middling	-	17
Strict low middling	-	35
Fully low middling	-	55
Low middling	-	80
Strict good ordinary	-	140
Good ordinary	-	210

The foregoing grades constitute what is known as white cotton. Following are the "tinged" and "stained" grades, the basis being middling, 12 cents per pound, as in the former table:—

Grades.	Points on (+) or off (-).	Increase (+) or decrease (-) in value of bale.
Strict good middling tinged	+	43
Good middling tinged (same as middling)	...	...
Strict middling tinged	-	15
Middling tinged	-	30
Strict low middling tinged	-	80
Low middling tinged	-	100
Middling stained	-	90

Under the rules of the New York Cotton Exchange, delivery of cotton purchased for future delivery may be made at seller's option on three days' notice to buyer. Delivery of any grade may be made from good ordinary (white) to fair, inclusive; and if tinged, not below low middling tinged; if stained, not below middling stained. The price is for middling with additions or reductions for other grades according to the rates existing on the afternoon of the day previous to the date of notice of delivery. Liverpool classification for middling and all grades above is about one-fourth grade lower than New York classification and for grades below middling one-fourth to one-half grade higher than New York.

Government types.

The nine types selected by the Department of Agriculture, beginning with the highest, are: Fair, strict good middling, good middling, strict middling, middling (basis), strict low middling, low middling, strict good ordinary, and good ordinary. These types were established by a committee of experts in accordance with the Act of Congress providing for the work, and, as explained in another part of this report, are generally accepted by those actively engaged in the buying and selling of cotton. They are not intended to determine length, strength, and fineness of staple, but to determine colour and cleanliness of the cotton. They have special value in making comparisons to decide types, and are used much in the same manner as samples of fabrics are employed in "matching." Objection is made that while these Government types have value in determining the general quality of cotton grown in the section from which the standard types were taken, they cannot be used with accuracy in classifying cotton grown in other sections.

The confusion in standards of various markets is shown in the following statement from a North Carolina merchant which, it should be mentioned, was made before the Government types were selected:

"Cotton from different sections represents different values. For instance, middling cotton from Mississippi is given preference over middling cotton from Georgia, and middling cotton from Georgia will bring a higher price than middling cotton from North Carolina. That is owing not only to a difference in staple, but in the general character of the cotton—what we call the "body" of the cotton. The Mississippi cotton, for instance, has the heaviest body and the strongest fibre of the cotton of any State east of the Mississippi River, unless it be Louisiana. Georgia cotton has about the same body as Carolina cotton, but better staple. But the grade of the cotton is not determined by the staple nor the body of the cotton, but by its character as to cleanliness and colour."

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Cotton required by manufacturers.

Each manufacturer requires a certain grade and type of cotton to produce his particular class of goods. When a manufacturer makes a small range in numbers of yarn, or is confined to one or two different grades of fabrics, only one grade of cotton will be needed. When, however, a manufacturer makes a wide range of yarns and fabrics, different grades of cotton are frequently used. In the first case, it will be necessary for the manufacturer to have as nearly as possible even-running bales. To have a mixture of cotton—that is to mix the longer with the shorter staple—would cause a considerable amount of trouble, particularly if the cotton should be mixed together. Any mixing of long and short staple would mean a loss of production with an additional amount of waste in the making of yarns. This occurs in mills where the mixing of cotton does not receive the particular attention which should be given it. Inability to mix and successfully spin cotton of different grades and lengths is due to the fact that the rolls in the different machines which have to draw out the cotton into thread travel at different speeds, the back roll travelling slower than the front roll. These rolls are also set a certain distance apart, according to the length of the staple. If the rolls should be set to spin 1-inch cotton and 1½-inch should be used, the rolls would break the fibres, and this would have a bad effect in the making of yarn. On the other hand, if the rolls should be set for 1½-inch and seven-eighths or 1-inch cotton should be used, many fibres would drop between the rolls and in this way there would be much waste and loss. Where the manufacturer makes a wide range of yarns and fabrics, such a mixing of cottons of extreme different lengths is almost unheard of. Therefore should the manufacturer get different grades in any lot of cotton, the bales would be separated according to grade, and used according to the staple required for a certain yarn or fabric.

Lesson from the figures.

The foregoing brief outline of the methods that obtain in classification and grading of cotton will convey an idea of the intricacies of the system and of the difficulties that confront the ordinary farmer in seeking to obtain a fair and proper price for his product. It has been pertinently said that, in the South, "cotton is bought, not sold." The expert buyer, familiar with the relative value of grades, decides upon the quality of the cotton offered and the farmer often has no means of ascertaining the correctness of the buyer's judgment.

As may be seen from the foregoing table, which is given to illustrate the different values of the various grades according to the classification and grades established by the New York Exchange for the period stated, the difference in a single grade above middling may have a money value of \$2.80 per bale and, if the difference should be two grades "on," the money value may be \$6.50 per bale.

Mr. H. A. F. LINDSAY, I.C.S., called and examined.

5842. (President.) In my written evidence, I have pointed out the difficulties that we have to contend with as regards long staple cotton. I am of opinion that more attention should be paid to staple, and to grading by staple, as in America, to supplement purchase by class. I would advocate the establishment of permanent long staple markets managed by firms devoting themselves particularly to that. I am not in favour of legislation, though I am in favour of licensing; if legislation is necessary it should, to my mind, be confined to the enforcement of a licensing system. The question is, whether the trade is at present organised sufficiently to be able to combine against an unlicensed press. I doubt if it is. I think I am right in saying that cotton brokers are licensed in Bombay in the ordinary course of business. Brokers are also licensed in many of the chief centres in India but they are not licensed by legislation. For example, where there are brokers' associations, no respectable firm would deal with a broker who was not a member of an association. I would rather avoid legislation if possible. My objection to legislation is that it may go too far. The whole point of my proposal is that the trade should be organised to protect itself. If the trade be organised by means of legislation, the danger is that it may find itself unable to go further without more legislation. Legislation should be practically confined to the prohibition of gins and presses working without a license given by a properly constituted board of control, to be organised on lines generally similar to those of the Assam Labour Board. I do not want that parallel pressed too far. It is a fairly close parallel to this extent, that there may be no recruitment of labour except under license from the Assam Labour Board. Under such a system of ginning licenses, the purchaser would know where his cotton was coming from. It would be accompanied by a system of marks. As to the movement of waste to a district of good reputation to be mixed with the local cotton, I think the result of legislation would be to make such movements more expensive. I do not think it would stop them. I have not come across similar abuses in the case of jute.

5843. (Mr. Wadia.) Such legislation would make the movement of waste more expensive, in that the law would merely be evaded and corruption and petty tyranny would ensue; evasion would merely be a matter of money. If regulation were made that no cotton or waste of any sort should be transferred from one place to another up-country, I do not think that would stop all the irregularities that now occur. Suppose an up-country dealer wants a bale of cotton brought from the next district to complete his work, why should he not be allowed to get it? My point is that you would hit good trade as well as bad. The State has no business to legislate in such matters unless there is an absolute evil which can be combated on clear issues. I wish the trade organised with a view to protect itself, and Government to assist the trade to organise itself. As to the steps which should be taken to prevent the Broach crop from being ruined because Khandesh cotton is brought in to be mixed with it, I do not think legislation is the right solution. So long as a purchaser is willing to buy mixed cotton from a seller, I do not see what legislation can protect him. If all presses were licensed, and bales marked, the purchaser would know where he obtained his cotton from. The results of this would be that the mills would be in a better position to buy what they require, and it would be found that the number of purchasers who wanted mixed cotton would be reduced and the number of those who wanted pure cotton would be increased. The mills certainly know what they want and would be able to insist on getting it. The Agricultural Department would come in and encourage the growth of long staple cotton by distributing pure seed. I cannot deny that the efforts of the Agricultural Department every year might be frustrated by the mixture of seeds in the ginneries. But at the same time, take, for example, the case of Pusa No. 12 wheat, which is spreading very consistently in the north of India, in spite of ignorant and unscientific method of cultivation. The adulteration of wheat also has been stopped by agreement among the trade. Even in the case of petty dealers who are not exporting firms adulteration is stopped thanks to the influence of the contract. I admit that it is very difficult to judge the quality of cotton from samples

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[Continued.]

You have to take into consideration leaf, mixture of staples, crushed seed and dirt. There may therefore be four faults and not merely one as in the case of wheat. The only remedy that I can suggest has already been stated in my written evidence. I would ask Government only to organize the trade to protect itself. My suggestion is that a committee or board should be formed which should license gins and presses and that bales from each press should be marked with a distinguishing mark so that the ultimate purchaser may know from which press the cotton came. Then the purchaser who gets good cotton from a particular press will go on purchasing from that press and if the demand for good cotton is real, the demand for cotton from that press would increase. If a man buys cotton from three or four ginneries, mixes it and then presses it for sale, the purchaser would still be protected to this extent that he would not buy again from the same vendor, after this one experience, but would try to confine his dealings to bigger dealers who would sell him consistently good cotton. The owner of a pressing factory is not bound to press everything that is brought to him. He is a free agent. If he got a complaint that one of his bales, say No. 1022, contained inferior cotton, then the next time the *bania* at fault brought him cotton, he could tell him that unless he gave him as good cotton as, say, Rallis, then he would press for him but not otherwise. The trade must be organised to protect itself. The success of this scheme depends on the strength of the demand for good cotton. If the demand for unmixed cotton is not strong, legislation itself would fail.

5844. In America, they purchase on length of staple and I do not know why they should not purchase on that basis in India. The purchaser, having decided to buy a certain quality of cotton, will then take into account the length of staple. In Liverpool, the purchaser of "middling" cotton knows what he is going to get. The ultimate price should depend on the length of staple. Marking the bales would assist a purchaser who wanted to buy good cotton.

5845. I think that the expenditure on the licensing body I have suggested would certainly be worth while. A similar question was asked when the Assam Labour Board was constituted in order to meet the conditions under which labour was recruited up-country. The licenses issued by the Assam Labour Board carry their own conditions such as the provision of proper sanitary arrangements for housing and conveyance. In the case of ginning and pressing factories, I would give licenses without any conditions except the marking of bales. I hope, later on, conditions to ensure against mixing will be added but that is a matter in regard to which the licensing board would have to move slowly. At the start the sole condition would be that the bales should be marked. One cannot tell in what circumstances or when, conditions discouraging mixing might suitably be imposed. I would not start with them. I would allow the Central Board to make its own investigations and its own rules.

5846. If long staple cotton were marketed separately from short staple, I think the former would fetch a better price than it does now, but, on the other hand, the short staple cotton might diminish in value. It all depends on this ultimate factor—the real strength of the demand for pure cotton. I know that there has been deterioration in districts which used to have a reputation for long staple cotton. The conditions are probably different in different districts. In some cases the deterioration has been due to the mixing of seed. What I want to get at is a scheme which will assist the purchaser who wants pure cotton to be able to purchase it. Under such a scheme as I suggest, the press owner would not press mixed cotton if he could possibly avoid it and if he did press such mixed cotton, he would get a lower price for it in the Bombay market. I do not say for certain that it will be necessary to impose conditions in the license which will prevent mixing; but the Central Board should certainly have power to impose such conditions if and as required.

5847. I have suggested in my written evidence that a small export cess of a few annas a bale might be imposed to meet the expenditure on seed distribution, demonstrations, bonuses, etc. I have suggested the levy of such a cess on the export trade, only if the funds from the licensing of presses are not sufficient and if the money is not forthcoming otherwise. I suggest a cess on exported bales only, because it will be easier to collect and because we have precedents for it, e.g., the rice cess, the jute cess and the newly constituted indigo cess. It is a very moot point as to whether an excise duty should also be levied. The export cess would have to be kept so low that it did not affect the cost of marketing in foreign countries. I should not like to see it so high as a rupee a bale.

5848. As regards the distribution of seed, I think it would be an excellent thing if Government could control the whole of it but that would require an enormous staff. I think that Government should open more demonstration farms but I am afraid that is rather outside my province. By bonuses I mean extra money to be paid to those who would press clean cotton.

5849. I do not know anything about the Japanese rule that any one who wants to sell cotton in Japan must sell it through a Japanese trade association, but Japanese shippers get a rebate from steamship agents with whom they have solely dealt over a period of six months.

5850. All classifications by names of stations might ultimately be done away with. Purchase should not merely be by class, but should also be by staple so far as possible. The grading of cotton grown in the same district from the same seed might be different but that would be a matter of detail to be arranged subsequently. The first duty of the board will be to go into points of detail like that.

5851. (Mr. Hodgkinson.) I am in favour of the same procedure being adopted in regard to Indian cotton as is adopted in regard to American cotton, i.e., the length of the staple should invariably be mentioned in the contract. The purchase should not merely be by class but also by length of staple. The introduction of a "mutual allowance" clause as on the Bremen Exchange would certainly tend to attract cotton to Lancashire. At present there is no mutual allowance clause in the Bombay arbitration rules. I am very much in favour of the introduction of an arbitration clause based on the Bremen rules. Any price that you may offer the cultivator would only reach him through the dealer. It is absolutely impossible to reach him direct. I do not know whether it would be possible to enforce a spot market in order to put a stop to future buying. I do not think it would be feasible.

5852. (Mr. Roberts.) The main reform would be to get pure staple. I consider that the licensing of presses and marking of bales would be a big step in advance. If the premium of long over short staple cotton is not sufficient, no legislation would affect a permanent cure. Over-drastring legislation can always be got round.

5853. As to the effect of a cess on the price of the cotton crop that is not exported, at present the foreign consumer and the Indian consumer compete for cotton and the local consumer has an advantage in the difference in the cost of marketing. This cess would add, say, four annas a bale to the cost of marketing Indian cotton in London and it would therefore result in a very slight further advantage to the local purchaser. It would not have any real effect on the price obtained by the cultivator because the ordinary

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fluctuations in the price are so very much greater. I do not think that, in actual practice, the export cess on rice results in rice being sold any cheaper in India. Theoretically it ought to be so but, in actual practice, the cost of marketing abroad is so much greater that this slight addition does not affect the relations between the Indian purchaser and the foreign purchaser. The cultivator will not get any lower price from the local consumer as a result of a cess on cotton.

Mr. G. FINDLAY SHIRRAS, M.A., F.S.S., I.E.S., Director of Statistics, Calcutta.

EXAMINED AT CALCUTTA, MARCH 21ST, 1919.

Written statement.

Part I.

MEMORANDUM ON THE IMPROVEMENT OF COTTON FORECASTS.

I.—GENERAL.

5854. *Preamble.*—The cotton area of India is from 18 to 25 million acres, the reported estimates of outturn range from three to five million bales of 400 lbs. each, and the average yield per acre about 80 lbs. (vide Annexure I). The outturn may be considerably increased if efforts are made (1) to increase the yield per acre either by more intensive cultivation or by the use of better types of seed; (2) to increase the acreage especially where irrigation is possible; and (3) to improve the quality of the staple (a) by the licensing of gins which would lead to the prevention of mixing of the seed and (b) by the supply of suitable seed on a large and businesslike basis. The question as to whether the area can be extended is beyond the scope of the Department of Statistics. With regard to yield, it may be stated that amongst the three important cotton growing countries of the world, namely, the United States of America, India, and Egypt, India has the lowest yield per acre. The yield per acre in the United States of America is about 200 lbs. and that in Egypt as much as 450 lbs. The low yield per acre in India is due (a) to want of proper care in cultivation or to the use of less prolific types of seed, (b) to underestimating to a large extent by the local reporting agencies on whose reports the statistics are primarily based. This Department is concerned with this latter point and the present memorandum, therefore, deals with the question regarding the improvement of the estimates as published in the Cotton Forecasts.

II.—THE PRESENT METHOD OF FRAMING ESTIMATES.

5855. *The factors in framing estimates.*—Under the practice in vogue there are three factors which contribute to the framing of an estimate of the outturn of a crop in India. These are the area, the standard normal outturn per acre, and the anna estimate or the percentage estimate representing the relation of the year's crop to the normal per acre.

5856. (i) *Area.*—As regards the first item—area, there exists in the village establishments of most provinces an agency capable of reporting the area under the crop with a great approach to accuracy. In tracts, where village establishments do not exist (e.g., the permanently-settled tracts) the figures of area are based on rough estimates. These estimates once framed are liable to become stereotyped and repeated year after year without regard to the influence of exceptional seasons or changes in the economic conditions of the tracts. In order to prevent this, provision is now made in this Department for an annual examination of the figures as they are received and provincial authorities are supposed to revise these estimates by a comparison with the conditions prevailing in the adjoining areas possessing a similar character for which accurate information is available, as also by means of such special enquiries as may be possible. In cases where a forecast crop is sown mixed with other crops in the same field, the practice is to show such area only as is estimated to represent the area covered by the forecast crop alone. The estimate is based on formulæ prescribed by the provincial authorities, according to local conditions which are not identical for all the crops nor for all the provinces.

5857. (ii) *Standard normal outturn per acre.*—With regard to the second factor, the Agricultural Department in each province maintains a statement of the normal or average yield per acre of land of average quality. In order to test the accuracy of these standards of normal yield and to revise them, where necessary, a system of crop-cutting experiments is in force in all the provinces. These are conducted annually by local officers on selected plots of land of average quality and in accordance with rules specially framed by the provincial authorities. The results are reported to the head of the provincial Agricultural Department who, on a careful scrutiny of all the reports and after such further investigations as he may deem necessary, revises or verifies the standards previously adopted for the districts or the province. This revision is ordinarily made once in five years. These yields are not used for the forecasts in Burma and the same applies more or less to Madras.

5858. (iii) *The anna or percentage estimate.*—The third factor is the anna estimate or the percentage estimate, which represents the relation borne by the crop reported on to the normal per acre. Almost all over India the outturn is estimated in annas or sixteenths, that is to say, a certain number of annas is taken to represent the normal outturn and then the outturn of the year of report is estimated as so many annas higher or lower than the normal. But the anna estimate of one tract is not amenable to comparison or combination with that of another tract; for the number of annas taken to represent a normal outturn is not the same everywhere, but varies between twelve and sixteen annas. Consequently, as the anna standard thus adopted would not possess any fixed or uniform value, it was arranged that in published forecasts the anna notation should not be used, the American notation being used in its stead, 100 being taken to represent a normal crop and the estimated outturn being stated as a percentage of that crop, the conversion of the anna estimate into the percentage estimate being made either by the district officer or by the provincial authorities.

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5859. *Relation of the factors to the quantitative estimate of outturn.*—When these three factors are determined, they are multiplied with each other to arrive at the quantitative estimate of outturn. Thus, if the area be 2,000 acres, the standard normal outturn 500 lbs. and the percentage estimate 80, the estimate of the total outturn would be $2,000 \times 500 \times \frac{80}{100} = 800,000$ lbs.

III.—DEFECTS IN THE ESTIMATES.

5860. *Defects in regard to area figures.*—With regard to the first factor—the area figures—it may be stated that whatever be their source, it cannot be gainsaid that they are, on the whole, fairly accurate, and this may well be guessed from the fact that merchants do not demur to accept them as the basis for their own calculation of outturn. Still the system is not quite unimpeachable. Instances have occurred when the estimates of district officers in certain tracts have been found not to tally with actuals. This is mainly due to omissions in reporting on the part of village officers. Even for crops for which more than one sowings return is made, it frequently happens that a *tahsildar* reports in the later return a less area cultivated with a certain crop than in his former return, and he may or may not add a remark that returns from one or two villages have not been received by him. As far as he is concerned, that does explain the decrease in the figures reported by him, but it does not help the provincial Director in framing the provincial estimate, for although he has some idea of the prevalence of certain crops in certain tracts, he has not that knowledge for all the villages in the province.

5861. *Defects in regard to the standard normal outturn per acre.*—Next with regard to the second factor—namely, the standard normal outturn per acre. It is difficult to determine the true normal, which is rather of a visionary character. In fact considerable difficulty has been experienced in all countries of the world in arriving at what a normal outturn is; but still it seems to have been recognised that the normal standard is the best as the base for estimating outturns of crops. In this connexion, the following passages quoted from the United States Department of Agriculture Circular 17 (1915) may be of interest. “Special consideration has been given for many years to the so-called ‘normal,’ representing a condition or yield of 100 per cent., in terms of which all the crop condition estimates of this bureau are expressed. An objection to the use of this term and what it represents, as a basis for crop reporting, arises from its apparent vagueness and the fact that the yield represented by it is different for each locality and even for each farm, thus requiring explanation in order to be understood. The principal advantage of the term ‘normal’ is psychological in that it is based on a fundamental conception which is fairly uniform and clear in the minds of all practical farmers from whom over 99 per cent. of the crop condition reports of this bureau are received.” * * * * *

“This whole subject of standards or bases for crop reports has been thoroughly and repeatedly considered, both in this country and abroad. On every occasion when the subject has been considered in this bureau the normal has seemed to possess more advantages and fewer disadvantages than any other standard.”

(2) In India, the term normal has been defined as “that crop which past experience has shown to be the most generally recurring crop in a series of years; the typical crop of the local area; the crop which the cultivator has a right (as it were) to expect and with which he is (or should be) content, while if he gets more he has reason to rejoice, and if less he has reason to complain.” The term has also been defined as “the figure which, in existing circumstances, might be expected to be attained in the year, if the rainfall and seasons were of a character ordinary for the tract under consideration, that is, neither very favourable nor the reverse.” As already stated above, the standard normal outturns are determined by local authorities on the basis of crop cutting experiments and other investigations made by them from time to time. Experience has shown that experiments conducted by the district revenue staff are not always reliable, and the provincial Directors have often to depend on other sources, e.g., the Settlement records,* for revising their standards. Whatever may be the source, it cannot be said that the standards so far arrived at are entirely satisfactory although they are gradually being improved. In 1915, it was pointed out by the Government of India that “the rules adopted in the various provinces for the conduct of experimental cuttings were not uniform especially in regard to the area to be experimented on and the grade of officers selected to superintend experiments,” and the following instructions were issued in order to improve matters :—

“The three agencies now employed are officers of the Revenue, Settlement, and Agricultural Departments. While much valuable work in this direction has been done in the past by officers of the Revenue Department, there are serious objections to a system under which reliance is placed mainly on this agency. The selection of a typical field is a matter of no little difficulty to one who is not an expert, and members of the district staff over-burdened, as they are, with ordinary duties, can scarcely be expected to find time for experiments which even in the simplest cases takes a long time to carry out properly. As regards the employment of officers of the Settlement Department, it was not intended that this agency should not be utilized and, if for no other purpose than to gauge the relative assessment capacities of various classes of land, crop-cutting experiments must continue to be made during settlement operations. The results of such experiments, examined and collated by officers of the Agricultural Department, are of considerable value and should continue to be used in ascertaining average outturns. But provided always that the staff is adequate there can be no doubt that, if accurate results are to be obtained, reliance must be placed on trained officers of the Agricultural Department who would continuously and on a well-ordered plan carry out experiments in each agricultural tract. If the staff is not sufficiently strong to enable this to be done, it is desirable that efforts should be concentrated so that for, at all events, a portion of the province results of real value may be obtained.” Local Governments are taking steps in order to carry out these instructions, and the effects of the steps have yet to be seen.

5862. *Defects in regard to the anna or percentage estimate.*—It is in the third factor—the anna or percentage estimate—that the system has been found to be most defective. For, the true relation of the season's outturn to the normal is seldom determined or reported, the tendency being invariably to underestimate a good crop. A comparison with the trade figures (net exports plus consumption) conclusively

* In Burma it is stated that the standards for making forecast estimates are based entirely on data collected by Settlement Officers during settlement operations, the results of crop experiments conducted by district officers being rejected as unreliable.

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proves on which side the official estimates err. The statement below compares the total figures for All-India* for the last ten years :—

	Area (acres)	Official estimate of yield (bales).	Net exports and consumption in and outside mills (bales).	Percentage excess (+) or deficit (—) of column 3 as compared with col. 4.
1	2	3	4	5
1907-08	21,630,000	3,122,000	3,782,401	—17.5
1908-09	19,999,000	3,692,000	4,200,150	—12.1
1909-10	20,545,000	4,718,000	4,928,000	—4.3
1910-11	22,596,000	3,853,000	4,303,000	—10.5
1911-12	21,615,000	3,288,000	3,985,000	—17.5
1912-13	22,028,000	4,610,000	4,483,000	+2.8
1913-14	25,023,000	5,066,000	5,913,000	—14.3
1914-15	24,595,000	5,209,000	4,889,000	+6.5
1915-16	17,746,000	3,738,000	5,109,000	—26.8
1916-17	21,745,000	4,489,000	4,628,000	—3.0
AVERAGE	21,752,000	4,179,000	4,622,000	—9.6

(2) The exports as well as the mill consumption are for the year ending the 30th September up to 1910-11; from 1911-12 they are for the year ending 31st August (the recognised cotton year in India). No reliable information exists as to the annual consumption outside mills; but, in 1911, it was settled in consultation with the Bombay Cotton Trade Association to adopt the conventional estimate of 450,000 bales. This figure has been included in the net exports and consumption figures for each year up to 1913-14. The figure was revised in consultation with the Association and raised to 1,000,000 bales for the exceptional year 1914-15 and to 750,000 bales for each of the years 1915-16 and 1916-17. It will be seen from the above figures that in two cases only the official estimate shows an excess, while in the remaining eight it shows a deficit. “Carry over” is, however, not included in the above figures; but this item does not affect the comparison if a series of years is taken into account. Thus, on the average of the last ten years, the net result is that the official estimate shows a deficit of 443,000 bales or nearly ten per cent.

(3) This tendency of under-estimating owes its origin firstly to the ingrained pessimism of Indian cultivators and village officers. The cultivators possess an ineradicable instinct that it is imprudent to estimate a bumper crop as a bumper crop. The village officers have mostly to rely on the estimates of the cultivators as they have no expert knowledge in the matter. The upshot is that very rarely is a normal outturn reported. This is clear if one looks at the estimates of outturn of cotton in percentages of normal given in the provincial Season and Crop Reports. For facility of reference statements showing such percentages for the ten years ending 1916-17 are given in Annexure II. A table showing median averages for the provinces has also been prepared and is given below :—

PERCENTAGE ESTIMATES OF OUTTURN.

Median averages for the provinces.

Provinces	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
United Provinces	50	80	87	80	70	90	60	80	80	75
Punjab { Irrigated	80	77	92	80	77	102	92	82	70	95
{ Unirrigated	50	65	80	75	50	95	80	70	60	90
Madras	75	67	75	67	67	75	67	67	75	98
Bombay	50	50	83	69	35	70	80	76	75	83
Sind	67	62	71	67	58	67	58	50	50	58
Burma	63	90	100	75	99	100	87	75	73	80
North-West Frontier Province { Irrigated	80	87	85	77	77	90	90	82	70	95
{ Unirrigated	80	100	90	90	80	80	75	90	85	70
Central Provinces and Berar	58	77	100	90	98	83	76	90	100	80

NOTE.—Bengal, Bihar and Orissa and Assam do not show percentage outturn of cotton in their reports.

It will be seen from these statements that a 100 per cent crop is rarely reported. Secondly, it is due to the fact that the subordinate agency finds it difficult to regard 100 per cent or sixteen annas as representing a

* Detailed figures of area, estimated yield, and yield per acre are given in Annexure I.

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normal crop. This defect vitiates the whole system and sometimes makes our forecasts ridiculous. If we want to make these serve the purpose for which they were called into existence, namely, to give to the trade as accurate an indication as possible of the expected outturn, the existing system requires revision. In this connexion the following extracts from a letter from the Director of Agriculture, Madras, bringing out the defect of the system and suggesting ways for correcting the estimates, are very interesting :—

“ A tabulation of the figures of past years shows that the average crop over a series of years in any district works out at about 75 per cent of the ‘normal’ crop. This shows clearly that the *karnam* (village accountant) upon whom the whole system depends, invariably underestimates the outturn, or in the alternative, does not understand what a ‘normal’ crop is.”

“ There are two ways in which the estimate could be made more accurate :—(1) by inducing the *karnam* to change his mental standard and to report a ‘normal’ crop as twelve annas, or (2) by introducing a correcting agency at some stage,

(1) would be extremely difficult, if not impossible, and would in any case take ten to twenty years. It is very difficult to define a ‘normal’ crop. The outturn of such a crop really varies in each small tract of different soil fertility. On the other hand, (2) would be easy, and could be done at once.”

“ The existing system gives us a very elaborate relative classification of crops according to their yield, and this is a firm basis on which to work. Any attempt at altering the system radically would only upset this basis. All that is necessary is to raise the standard by applying a suitable correcting factor. This could be done almost automatically as detailed below. Suppose that the average outturn of a particular crop in a particular district as worked out on present lines for the last ten years (excluding real famine years) comes to 75 per cent of the normal, and that the current year’s estimate worked out on present lines comes to 80 per cent. I would then correct this latter figure by applying the *correcting factor* 100—75 the result being 107 per cent. The final result of such a system would be that over a series of years the average, i.e., normal crop would be reported as 100 per cent. Allowing for the real famine years, the average would be a little below 100 per cent. This, I presume, is the standard to be arrived at.”

IV.—SUGGESTIONS FOR IMPROVEMENT.

5863. *Necessity for further co-ordination.*—The main suggestion for improvement is the necessity for further co-ordination. Unless local authorities see their way to check more than at present the estimates of outturn, I am of opinion that the publication of provincial forecasts should be discontinued and one forecast published by the Central Statistical Office which should be closely in touch with experts.

5864. *Improvement of figures of area.*—With regard to area, the omissions in reporting on the part of village officers may be successfully stopped if measures such as prescribed by the Madras Board of Revenue in their Resolution No. 2 of 5th January 1915 (*vide* Annexure III) were adopted in every province where the village revenue staff exists. They are briefly as follows: The Revenue Inspector or Circle Officer should maintain statements in which figures should be posted every month from the cultivation accounts received from the village officers showing the sowings in each month for all forecast crops. He can thus see at once for what villages returns have not been received. For the villages for which returns are not received, he can frame an approximate estimate in accordance with the following formula :—

Area in the previous year in that village $\times$ area in the current year in the other villages in the circle.

The total reported area in the other villages in the previous year.

In sending his return to the *tahsildar* he would note the number of villages for which he made estimates. The *tahsildar* office would maintain similar registers for the groups of villages under the Revenue Inspectors.

5865. *Improvement of estimate of outturn.*—With regard to the estimate of outturn, I am afraid a great overhauling is necessary, and I would make the following suggestions :—

- The reporting agency should be improved as far as practicable by employing men who have received practical training in agriculture. At present the agency is a revenue agency, not an agricultural. It is quite impossible to make anything like an accurate estimate of the crop on the ground as could an agriculturist.
- A system should be introduced for a very close and careful check of the returns by agricultural experts in the local as well as in the central offices. At present the returns submitted by the local reporting agency is seldom checked in the majority of provinces owing mainly to the fact that the provincial Directors of Agriculture have little time to devote to statistical work with the result that great difficulties are sometimes experienced by the Department of Statistics in preparing the all India estimates. The point is dealt with in a subsequent paragraph.
- The system of checking the returns by the statistics of exports, mill consumption and extra factory consumption, when these are available should be extended. This is already being done in some of the provinces and is also done in this Department for the whole of India (*vide* “ Final general memo. on cotton ” and “ Estimates of area and yield of principal crops in India ”—table relating to cotton and also the table in paragraph 5862 above). In respect of extra-factory consumption it may be stated that the Bombay Cotton Trade Association decided last year that, in the absence of any accurate data, it should be estimated at the yearly rate of one lb. per head of population (giving a total of about 750,000 bales per year for all India), and that this figure should be permanently retained except in cases of very exceptional years.
- The system of obtaining estimates from non-official agencies for checking and revising, if necessary, the official estimates should be introduced or extended, as the case may be. There have been instances when estimates made by those in the trade for a particular tract with which the estimators are specially interested have been found to be close approximations to the actuals. In the United States of America (sometimes not a completely analogous case as conditions are there different in many respects) the official returns are examined and checked with a vast number of voluntary reports obtained from various sources, e.g., farmers, planters, merchants, mills, presses, gins, etc. (*vide* Annexure V). It may be stated here that, at present, the system obtains, although rather in a crude state, only in a few provinces of India, mainly in the United

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Provinces. For instance, in the United Provinces, forms * containing questions regarding area, climatic conditions, state of crops, expected outturn, etc., are sent to certain non-official reporters, whose answers are utilized in framing the forecast reports. A similar system is under trial in a few districts in the Punjab in respect of the cotton crop. In Bengal, Bihar and Orissa, and Assam, services of *panchayats* (village committees) are utilized in the case of the jute crop. The *panchayats* maintain registers containing the names of all who cultivate jute within any particular union and the President of the *panchayat* enters in a blank form (supplied to him by the Director of Agriculture) the name of each person cultivating jute within the union and shows against his name the area under jute cultivated by him.

- The half monthly cotton press returns which have been instituted mainly with a view to maintain a check on the forecast estimates should be improved. As it is, the returns are grossly defective not only with regard to the Native States but also to many of the British Provinces. This subject is dealt with in a separate note.
- Great caution is necessary in estimating the outturn, when the crop is sown mixed with other crops in the same field. Experience has shown that mixed cotton often yields as much as the pure crop, especially when it is grown with such crops as are harvested before it. For no sooner the other crop is harvested, the cotton plants, which are then young, start forward, and having ample space and light (as compared with the pure crop which is generally sown very thick) spread out and yield almost as good a crop as if no other crop was grown mixed with it. The following quotation from a letter from the Director of Agriculture, Madras, may well illustrate the point :—“ I am chiefly interested in the cotton crop. The area of this crop in the ‘Northern and Westerns’ and ‘Cocanadas’ areas is certainly much understated, as a large portion of the area is cultivated with a mixture of one row of cotton and two rows of Italian millet. Three acres of this is shown as one acre cotton plus two acres millet. Whereas the yield of cotton will be equal to that of two to three acres of pure cotton, according to whether the season favours the millet or the reverse.” * * * * “ But this discrepancy does not affect the statistics of outturn so much as one might think, because the fact of mixed crops can be allowed for when fixing the normal outturn per acre. Thus for Cocanadas the old figures of yield per acre are fifty lbs. This was proved to be too low and was raised to 75 lbs. which appears to be correct. Now fifty lbs. is probably correct for a pure crop. But an acre of cotton millet mixture will also yield fifty lbs., although the area is only being entered as one-third of an acre. Presuming that one half of the total area is under mixture then we have, for every six acres :—

	lbs.
3 acres of pure cotton yielding	150
3 acres of mixture yielding	150
TOTAL	300

But this six acres will be returned in the accounts as only four acres, since the three acres of mixture is divided into one acre of cotton and two acres of millet. To get the correct yield we must multiply the four acres by 75 lbs. and so get 300 lbs. * * * * “ And so in other cases by taking the right figures for average yield per acre, i.e., by considering it as a mere factor by which to multiply the reported acreage in order to get the correct outturn, we can arrive at a true result. This presumes, of course, that the proportion of this area under mixture does not vary much from year to year. This is the case, and even if not so, it can to some extent be allowed for when fixing the ‘anna estimate’ of seasonal variations from the normal.” An apposite illustration will also be found in Annexure IV which reproduces a letter from the Director of Agriculture, Madras, to the Board of Revenue, Madras, explaining certain discrepancies in the reported outturn of cotton in the Guntur District.

- Measures should be taken by which the meaning of the term “normal” and its equivalent in annas may be clearly impressed on the minds of the primary reporting agencies. The trade in general takes the normal to be a sixteen annas crop, but it has been found (as a result of the circular No. 1083-252-1, dated the 5th December 1916, of the Government of India) that, in most provinces, twelve annas is considered as the normal and it is recommended that the same standard should be maintained. If, however, it is found difficult to persuade the subordinate reporter to regard twelve annas as the normal, it would be preferable to allow him to report in his own way, but the provincial Director should apply a “correcting factor” to the reported estimate, as suggested by the Madras Director (*vide* paragraph 5862 above).
- In order to avoid any confusion, arrangements should be made for the conversion of the anna estimate (wherever the system exists) into the percentage estimate, only at the office of the provincial Director of Agriculture, and not by any primary or intermediate reporting agency.
- The subordinate agency should report the yield in *kapas* (unginned cotton) in case a quantitative estimate is made by the subordinate agency. This should be converted into cleaned cotton in the provincial office or in the central office (the Department of Statistics). The Director of Land Records and Agriculture of the United Provinces and the Principal, College of Agriculture, Lyallpur, think that this would be an improvement.
- Enquiries should be made from ginning firms after the commencement of ginning, as to how the crop was turning out in view of the ginning percentage shown. This system obtains in the United States of America and how far effective it has been for checking the estimates of outturn will be evident from the following quotation from a letter dated 13th April 1917 from the Chief of the Bureau of Crop Estimates, United States of America : “ The production of cotton in the United States last year as finally determined by count from ginneries recently reported, was 11,442,838 bales. This compares with our estimate made in December of 11,511,000, with our forecast made in October of 11,637,000, with our forecast made August 31 of 11,800,000, and with our forecast made August 1 of 12,916,000. The 1915 crop was 11,191,820 bales, which compares with our estimate made in December of 11,161,000 and our forecast made in

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October of 10,950,000. These figures indicate how our forecasts compare with the actual out-turn." In 1916 it was found necessary to obtain from the various provinces in British India the proportion of lint in the various descriptions of cotton grown in them. The results then obtained are tabulated below:—

	OOMRAS				BENGAL-SIND			
	Khandesh	Barsi and Nagar	Berar	Central Provinces	United Provinces	Rajputana	Sind-Punjab	Others
Bombay (a)	35	33	..	..	..	35	..	..
Central Provinces and Berar	..	..	33	33	..	..	..	..
Punjab (b)	..	..	..	..	..	..	30	..
United Provinces (b)	..	..	..	..	33	..	..	..
Sind (b)	..	..	..	..	..	..	33	..
Bihar and Orissa	..	..	..	..	..	..	..	27
Bengal (b)	..	..	..	..	..	..	..	30
North-West Frontier Province	..	..	..	..	..	..	25	..
Ajmer-Merwara	..	..	..	..	..	33	..	..

	Dhollerias	Broach	Coompta-Dharwars	Westerns and Northern	Cocanadas	Tinnevellys	Salems (including Cambodias)	Comillas, Burmas and other sorts
Bombay (a)	35	34	28	25	..	..	..	..
Madras (b)	..	..	..	25	30	25	30	25
Burma	..	..	..	..	..	..	..	33
Bengal (b)	..	..	..	..	..	..	..	30
Assam	..	..	..	..	..	..	..	40

(a) Includes Baroda and other Native States.
(b) Includes Native States.

It is noticeable that long stapled cottons, such as Coompta-Dharwars, Westerns and Northern, Tinnevellys, etc., have a lower ginning percentage than short stapled varieties; and this is one of the reasons why Indian cultivators generally give preference to short stapled cottons.

(k) It is not known how far the results obtained on Government experimental farms are utilized by the provincial Directors in connexion with crop forecasts. Much valuable information can be obtained from the reports on experimental farms for revising the standard normal outturns (referred to in paragraphs 5857 and 5858) and for ascertaining the ginning percentage in different varieties of cotton. In this connexion, the comparison made in Annexure VII, of the outturns per acre of cotton as given in the reports on agricultural farms in certain provinces with those in the forecasts of the cotton crop, may be interesting.

5866. *Returns from Native States.*—Returns are at present received from almost all the Native States where cotton is of any importance, except Kashmir; but they are often found to be faulty. They need a good deal of scrutiny and editing which are not done at present. It may be worth while to state here that a third of India's cotton is produced in the Native States. The point was raised in the last Chiefs' Conference and it was recognised that there should be a closer co-operation than hitherto, between the Native States Durbars and the Department of Statistics, with a view to improving the returns, and that forms with clear instructions for filling them in should be issued in the local vernaculars.

5867. *Counting of bolls.*—It may be considered whether it is feasible to introduce a system of framing the outturn estimate by counting and examining the number of bolls on plants on sample plots. It is stated in the Report on the Working of the Department of Agriculture in the Central Provinces for 1911-12 that such a system was given in trial in Berar in that year with great success. At first, an estimate was made of the number of villages in each district containing good, average, and bad crop, respectively, and then a number of typical fields was selected from each of these classes and the numbers of buds, flowers and bolls per acre were counted in each of them. As many pickings as possible before the preparation of the returns were taken from each of these fields, and the bolls so picked were weighed and counted. With a due allowance for flowers that failed to set, a sum in proportion gave the amount of cotton that might be expected from fields of the type selected. Mr. Clouston, in his letter of 14th March 1918 says: "This system, which was drawn up in 1912, has since been slightly modified. Instead of classifying the crop as good, medium, and poor, the assistant selects 'average' plots only and carries out his experiments on these. This system has on the whole proved useful but it cannot be regarded as very reliable for the following reasons:—(1) In order to have the figures ready to send to the Commissioner of Settlements by the 1st of December, our agricultural assistants have to complete their experiments in the field by the third week of November; but it is impossible at that time to foretell what percentage of the flowers, buds, and immature bolls is to drop as the result of any rain there may have shortly before that time. (2) It is impossible, moreover, to foresee what the rainfall after that date is to be. Rain in the end of November or early in December stimulates the vegetative growth of the plant, which produces growth of the plant, which produces new flowers and continues to give late pickings as the result." (Vide Annexure VIII.) For the purposes of the preliminary cotton forecasts in Egypt, the Ministry of Agriculture takes into consideration the result of the examination of bolls made shortly before and during the time of picking, from samples received from each cotton district, by the head officers of the Technical and Scientific Division of the Ministry, enabling the correcting of bolls on the plant and a checked estimation of the damage caused to bolls by insect pests. Such a system could be followed only to a very limited extent.

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5868. *Dates of publication of the cotton forecast.*—The prescribed dates for the publication of the cotton forecasts are:—

	Provincial.	All-India.
First Forecast	August 10	August 15
Second Forecast	October 10	October 15
Third Forecast	December 10	December 15
Final Forecast	February 10	February 15

These dates were fixed by the Government of India in 1905. A suggestion was made at a Conference held last year in the Punjab that it would be useful to the cotton trade if the final area figure could be issued by the 20th November or earlier. So far as Southern India is concerned it may be necessary to issue the final forecast a month later than at present. An alternative proposal would be to issue a fifth or supplementary report in April. The lateness of the Madras crop appears to have been recognised by Government when fixing the dates mentioned above, and a suggestion was made that, when any part of the sown area or of the outturn in Madras could not be estimated by the 10th February, a note should be made to the effect in the February return. The revision of the dates of the All-India cotton forecasts will be considered, if necessary, on the publication of the Indian Cotton Committee's report.

5869. *Establishment of a crop reporting board.*—While making these suggestions, I must refer to another point which seems to have a vital connexion with the present subject. In some provinces, the attention of the Directors of Agriculture are so much engrossed in matters relating to the well-being of the cultivators, experimental farm work, improvement of agriculture, conferences, etc., that they get very little time for crop inspections, examination of crop reports or any statistical work. The result is that obviously incorrect estimates are sometimes reported, which have to be corrected by this Department on the basis of the reported outturn per acre in the adjoining tracts, the outturns in past years, and information obtained from non-official sources. For instance, in the final cotton forecast of 1917-18, the outturn for the Sind crop was estimated by the provincial Director as 48,000 bales on the basis of district returns, with the remark that the district estimates appeared somewhat low and that the crop was probably considerably larger than what the district returns indicated; and this Department had to raise the estimate to 67,000 bales. Similarly the estimates for the Hyderabad, Rajputana, and Central India States were found to be defective and had to be raised by this Department.

(2) In this connexion, the following quotation may be made from a note written by the Director of Agriculture, Bombay: "As regards the part that the Director of Agriculture can play in modifying forecasts in the light of his personal knowledge and of reports from agricultural officers, I have never found myself in a position to do more than say that I consider that the figures reported were probably too low or considerably too low.* The amount of country that I and my deputies can see in any season* is very small. Crops vary greatly in different areas at no great distance from each other, and even in the same place the crop may vary enormously from short seasonal causes. In the present year, for instance, at Dhulia we got on our farm 800 lbs. of cotton per acre, which represents about a forty anna crop, while the Registrar, Co-operative Societies, told me that in some villages near Dhulia the people got absolutely no cotton on account of the heavy rain in October just before picking began." * * * "Personally I have so much work to do in connexion with the farms, the district work, the staff, the public, reports, meetings, conferences, committees, etc., that I have very little time to give to statistics. My office compiles the figures, and all that I attempt to do is to make slight modifications or additions on the strength of any local knowledge that I may have. For a detailed study of statistical methods or of the figures that I report myself, viewed from different lights, I have no time; nor have I time to check effectively the figures that I report with any other figures that might give me a clue as to their accuracy; nor have I time to arrange tours so as to form any personal opinion of the crops of important tracts. I am not prepared to say what can be done to improve matters, but I think that the first step should be to appoint some one to do the statistical work who could give it his time and attention, and who would feel that it was his work to see that his statistics were accurate or to know the reason why. I don't feel this. Statistics are a mere detail of my work to which I can hardly give any time. When I am on tour, i.e., from October to June, I frequently do not even see the forecasts." This is certainly not desirable. Our forecasts cannot but be misleading, so long as such a state exists. All these facts combined with the growing importance of our crop forecasts point to the necessity of a thorough overhauling of the present system. One solution that I can suggest for the elimination of the difficulties is to collate in a Central Bureau the statistics received from the various agencies including officers of the Agricultural Departments and firms. Firms will not object to giving us their estimates if we can convince them that they will be kept strictly confidential until the day of publication of the forecast, and then on no account divulged. In short, our system might be similar, allowing for differences in local conditions, to that current in Washington (vide Annexure V), where there is a crop reporting Board, composed of statisticians and crop experts and presided over by the Chief of the Bureau of Crop Estimates, which do the crop forecasting for the whole of the United States. The local Directors of Agriculture might thus be relieved of the statistical work and thereby might have ample time to devote to agricultural improvement. It is true that the present conditions in India are unsuitable for the adoption of the American system *in toto*, but I venture to think that the time has come when a beginning might be made with advantage and steps taken year after year in order to reach the goal within a reasonable period. The main point, already referred to above, is that more co-ordination is required, and a cotton crop reporting board would be an unmixed gain.

V.—CLASSIFICATION OF COTTON ACCORDING TO TRADE DESCRIPTIONS.

5870. *Classification of cotton according to trade descriptions.*—For many years the cotton trade asked for classification of the cottons according to trade descriptions. In 1905, the Government of India suggested to Local Governments that, in order to increase the utility of the forecasts, it was desirable to indicate the degree to which the figures applied to each of the main commercial varieties of cotton, as was done at that time only in the Madras and Bombay forecasts. Shortly after the creation of this

* A reference may in this connexion be made to the paragraph headed "Sind" in the Final General Memorandum on the cotton crop of 1917-18. In some provinces, however, the Directors do revise and raise the district estimates when they consider these estimates to be too low, e.g., vide the Final Cotton Forecast of Burma for 1917-18 and also the method described by the Madras Director and quoted in paragraph 9 of this Memorandum.

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Department the Directors of the Cotton Trade Association rought up the question at a meeting which I had with them in April 1914. The suggestion was given practical shape in 1915 with regard to all provinces and the all-India forecasts. It was, in that year, arranged in consultation with the Bombay Cotton Trade Association that figures of areas and outturns should be shown according to the various descriptions of cotton as recognised by the trade. The figures for the last three years (1915-16, 1916-17, and 1917-18) as published in the Final General Memorandum are :—

Trade Descriptions.

Descriptions.	Acres (thousands)			Bales of 400 lbs. (thousands)			Yield per acre (lbs.)		
	1915-16	1916-17	1917-18	1915-16	1916-17	1917-18	1915-16	1916-17	1917-18
Oomras—									
Khandesh	1,222	1,510	1,403	340	342	187	111	90	53
Central India . . .	999	1,419	1,454	216	311	116	86	88	32
Barsi and Nagar . .	3,168	3,449	3,615	483	537	471	61	62	52
Berar	2,860	3,118	3,214	830	691	428	116	63	53
Central Provinces . .	1,192	1,284	1,368	276		163	93		47
TOTAL	9,450	10,780	11,054	2,145	1,881	1,365	91	70	49
Dholleras	1,180	2,061	3,309	150	585	660	51	114	86
Bengal-Sind—									
United Provinces . .	834	1,185	1,316	262	309	198	126	104	60
Rajputana	268	415	573	64	172	88	96	166	61
Sind-Punjab	1,089	1,431	2,082	247	419	348	91	117	87
Others	71	72	73	18	17	18	101	94	90
TOTAL	2,262	3,103	4,044	591	917	652	105	118	64
Broach	1,044	1,226	1,348	230	304	315	88	99	93
Coompta-Dharwars . .	1,031	1,385	1,611	231	260	319	90	75	79
Westerns and Northern	1,350	1,583	1,550	172	238	217	51	60	56
Cocanadas	251	275	261	35	48	47	56	70	72
Tinnevellys	568	647	577	84	134	136	59	83	94
Salem (including Cambodias)	281	334	640	32	47	235	46	56	145
Comillas, Burmas, and other sorts.	329	351	378	68	75	89	83	85	94
GRAND TOTAL	17,746	21,745	24,781	3,738	4,489	4,035	84	83	65

The cotton trade asked for a survey or map showing in different colours the tracts growing the above descriptions of cotton. The result has exceeded expectations. No less than 230 firms has in the last few weeks purchased copies and the Cotton Trade Association has decided to purchase 300 copies of the larger map now being printed. It may be noted that, in the above classification, the whole of the crop grown in Hyderabad (His Exalted Highness The Nizam's Dominions) was treated provisionally as "Barsi and Nagar." It has since been ascertained that a large amount of cotton locally named "gaorani" is grown in the Dominions, and is of a type quite distinct from "Barsi and Nagar." A proposal, therefore, is being considered to show Hyderabad cotton into two distinct classes, namely, "Barsi and Nagar" and "Hyderabad-Gaorani." It is also being considered whether the cotton grown in the Punjab instead of being shown wholly as "Sind-Punjab" (as at present), should be classified as "Sind-Punjab" and "Punjab-American," since the latter variety is stated to be now cultivated on an appreciable scale, and the area is steadily extending. There is at present no further proposal regarding a revision of the classification of cotton.

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ANNEXURE I.

AREA AND YIELD OF COTTON IN EACH PROVINCE.

Area (acres).

PROVINCE	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17	1917-18
Bombay (including Native States) (a).	6,241,000	6,469,000	7,334,000	5,786,000	6,826,000	7,323,000	7,796,000	5,005,000	7,037,000	8,227,000
Central Provinces and Berar.	4,176,000	4,167,000	4,487,000	4,648,000	4,493,000	4,754,000	4,708,000	4,061,000	4,402,000	4,582,000
Hyderabad State	2,902,000	3,401,000	3,562,000	3,234,000	2,888,000	3,653,000	3,805,000	2,964,000	3,200,000	3,451,000
Madras (b)	1,576,000	1,569,000	1,873,000	2,878,000	2,414,000	2,725,000	2,115,000	2,061,000	2,168,000	2,592,000
Punjab (including Native States).	1,562,000	1,436,000	1,385,000	1,582,000	1,575,000	2,053,000	1,857,000	902,000	1,163,000	1,799,000
United Provinces (c).	1,392,000	1,241,000	1,347,000	921,000	1,158,000	1,586,000	1,551,000	834,000	1,185,000	1,314,000
Central India States.	978,000	1,068,000	1,349,000	1,400,000	1,314,000	1,426,000	1,519,000	999,000	1,419,000	1,454,000
Rajputana States	389,000	464,000	465,000	263,000	393,000	470,000	421,000	244,000	334,000	435,000
Sind (including Native States).	259,000	214,000	279,000	346,000	296,000	341,000	336,000	161,000	240,000	245,000
Burma	204,000	198,000	167,000	186,000	233,000	290,000	270,000	187,000	223,000	246,000
Mysore	65,000	81,000	101,000	101,000	154,000	93,000	109,000	92,000	126,000	154,000
Bihar and Orissa	(d)	(d)	(d)	88,000	92,000	73,000	70,000	67,000	68,000	69,000
North-West Frontier Province (e).	54,000	32,000	33,000	56,000	56,000	59,000	60,000	26,000	28,000	38,000
Bengal (including Native State) (f).	161,000	166,000	169,000	63,000	51,000	87,000	90,000	88,000	73,000	71,000
Ajmer-Merwara	40,000	39,000	45,000	27,000	50,000	57,000	54,000	23,000	47,000	70,000
Assam	(d)	(d)	(d)	36,000	35,000	33,000	34,000	32,000	32,000	32,000
TOTAL	19,999,000	20,545,000	22,596,000	21,615,000	22,028,000	25,023,000	24,595,000	17,746,000	21,745,000	24,781,000

Yield (bales of 400 lbs. each).

PROVINCE	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17	1917-18
Bombay (including Native States) (a).	1,282,000	1,661,000	1,450,000	695,000	1,520,000	1,614,000	1,773,000	1,051,000	1,646,000	1,571,000
Central Provinces and Berar.	766,000	1,070,000	629,000	913,000	910,000	961,000	1,097,000	1,106,000	691,000	591,000
Hyderabad State	307,000	461,000	293,000	300,000	300,000	400,000	400,000	450,000	500,000	450,000
Madras (b)	162,000	180,000	235,000	335,000	471,000	308,000	245,000	245,000	347,000	569,000
Punjab (including Native States).	324,000	396,000	306,000	241,000	373,000	612,000	486,000	195,000	335,000	271,000
United Provinces (c).	426,000	384,000	348,000	251,000	428,000	484,000	486,000	262,000	309,000	198,000
Central India States.	144,000	221,000	237,000	228,000	206,000	273,000	293,000	216,000	311,000	116,000
Rajputana States	80,000	148,000	143,000	73,000	125,000	132,000	166,000	62,000	128,000	54,000
Sind (including Native States).	101,000	104,000	97,000	124,000	123,000	135,000	116,000	48,000	78,000	67,000
Burma	41,000	32,000	28,000	32,000	46,000	54,000	42,000	27,000	40,000	54,000
Mysore	3,000	6,000	10,000	17,000	19,000	11,000	14,000	14,000	16,000	22,000
Bihar and Orissa	(d)	(d)	(d)	19,000	19,000	17,000	16,000	16,000	16,000	17,000
North-West Frontier Province (e).	12,000	7,000	8,000	12,000	13,000	14,000	14,000	4,000	6,000	10,000
Bengal (including Native State) (f).	35,000	35,000	49,000	25,000	21,000	24,000	34,000	30,000	20,000	19,000
Ajmer-Merwara	9,000	13,000	20,000	12,000	26,000	15,000	15,000	2,000	35,000	14,000
Assam	(d)	(d)	(d)	11,000	10,000	12,000	12,000	10,000	11,000	12,000
TOTAL	8,632,000	4,718,000	3,853,000	3,288,000	4,610,000	5,066,000	5,209,000	3,738,000	4,489,000	4,035,000

- (a) Includes also the State of Baroda. Estimates for non-reporting tracts have been added from 1909-10.
 (b) Includes Native States.
 (c) Includes the Native State of Rampur.
 (d) Included under Bengal.
 (e) Includes the Tochi and the Kurram Agencies from 1913-14.
 (f) Includes Bihar and Orissa and Assam down to 1910-11.

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Mr. G. FINDLAY SHIRRAS.

[Continued.]

ANNEXURE I—contd.

Yield (lbs.) per acre of Cotton.

PROVINCE	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17	1917-18
Bombay	58	82	103	79	48	89	88	91	84	94	76
Central Provinces and Berar	54	73	103	56	79	81	81	93	109	63	52
Hyderabad State	38	42	54	33	37	42	44	44	61	62	52
Madras	43	41	46	50	47	78	45	46	48	64	88
Punjab	97	83	110	88	61	95	119	105	86	115	60
United Provinces	73	122	124	103	109	148	122	125	126	104	60
Central India States	22	59	83	70	65	63	77	77	86	88	32
Rajputana States	83	82	128	123	111	127	112	158	102	153	50
Sind	208	156	194	139	143	166	158	138	119	130	110
Burma	59	80	65	67	69	79	74	62	58	72	88
Mysore	29	19	30	40	67	49	47	51	61	51	57
Bihar and Orissa	..	..	..	..	86	83	93	91	96	94	99
North-West Frontier Province	75	89	87	97	86	93	95	93	62	86	105
Bengal	102	87	84	116	159	165	110	151	136	110	107
Ajmer-Merwara	98	90	133	178	178	208	105	111	35	208	80
Assam	..	..	..	..	122	114	145	141	125	137	150
AVERAGE FOR INDIA	57	74	92	68	61	84	81	85	84	83	65

ANNEXURE II.

PERCENTAGE ESTIMATES OF OUTTURN REPORTED IN SEASON AND CROP REPORTS.

Cotton.

UNITED PROVINCES	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
Dehra Dun	..	..	..	..	..	..	75	90	80	75
Saharanpur	75	85	85	80	75	95	75	80	80	75
Muzaffarnagar	55	85	85	55	50	75	80	80	80	70
Meerut	50	..	100	60	70	95	80	80	80	75
Bulandshahr	..	..	85	70	70	95	95	80	80	70
Aligarh	60	80	75	80	75	100	80	75	80	75
Muttra	50	60	75	70	55	95	60	80	80	60
Agra	50	85	95	75	75	100	60	90	80	60
Mainpuri	60	45	75	75	85	110	100	90	80	75
Etah	50	50	75	50	80	100	90	80	80	80
Bareilly	45	..	..	85	70	75	70	75	90	75
Bijnor	30	80	95	75	70	95	55	90	90	75
Budaon	45	95	100	70	50	85	55	80	90	75
Moradabad	30	85	100	60	50	80	55	90	90	75
Shahjahanpur	45	95	85	80	50	100	55	90	90	90
Pilibhit	..	..	100	100	75	80	55	95	90	75
Farukhabad	60	85	80	100	75	95	90	80	80	80
Etawah	75	80	70	100	95	100	100	80	80	75
Cawnpore	55	80	90	85	70	100	90	80	80	70
Fatehpur	50	70	100	80	40	75	60	75	80	70
Allahabad	30	85	95	85	75	80	75	80	80	75
Jhansi	25	50	110	85	80	85	25	80	90	90
Jalaun	30	80	95	55	50	100	35	75	90	75
Hamirpur	18	70	85	50	55	95	25	90	90	90
Banda	18	80	100	35	40	75	35	80	90	75
Benares	..	..	..	..	..	..	..	..	..	..
Mirzapur	..	..	..	..	100	85	60	90	80	75
Jaunpur	..	..	..	..	..	..	..	..	..	..
Ghazipur	..	..	..	..	..	..	..	..	..	..
Ballia	..	..	..	..	..	..	..	..	..	50

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Mr. G. FINDLAY SHIRRAS.

[Continued.]

ANNEXURE II—contd.

UNITED PROVINCES	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
Gorakhpur	..	85	..	..	..	..	..	..	..	75
Basti	..	..	..	..	..	..	..	..	..	..
Azamgarh	..	25	..	..	..	..	..	..	..	75
Nainital	50	..	..	75	70	60	45	75	90	60
Lucknow	35	..	85	85	85	85	60	90	80	75
Unao	55	55	75	75	50	80	60	75	80	75
Rae Bareilly	..	..	..	100	50	85	60	90	80	75
Sitapur	25	85	85	80	65	85	50	90	80	75
Hardoi	50	85	100	80	60	95	50	80	80	75
Kheri	..	75	95	95	60	75	50	90	80	75
Fyzabad	..	..	..	..	..	..	..	..	80	75
Gonda	45	100	..	..	..	..	..	..	80	75
Bahrach	..	..	..	..	..	..	..	..	80	75
Sultanpur	..	..	..	..	..	..	..	..	80	75
Partabgarh	..	..	..	..	..	..	..	..	80	75
Darabanki	..	..	..	..	..	..	..	..	80	75
MEDIAN AVERAGE	50	80	87	80	70	90	60	80	80	75

PUNJAB	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
<i>Irrigated.</i>										
Hissar	75	55	90	50	30	115	75	100	50	85
Rohtak	80	65	75	25	20	75	65	75	80	90
Gurgaon	50	30	110	60	70	90	80	80	75	70
Karnal	90	85	80	80	90	110	100	90	100	95
Ambala	80	90	95	80	65	105	90	90	100	100
Hoshiarpur	80	100	90	95	100	90	85	105	95	105
Jullundur	80	95	95	55	80	100	85	65	60	100
Ludhiana	100	115	100	70	85	120	90	75	75	90
Ferozepore	95	70	90	70	90	100	95	95	60	85
Lahore	80	55	85	65	115	80	85	75	90	100
Amritsar	100	50	75	120	100	115	75	75	100	90
Gurdaspur	100	95	95	95	100	110	100	105	105	105
Salakot	90	85	90	95	65	125	100	105	100	100
Gujranwala	80	80	95	100	50	120	100	90	60	95
Gujrat	100	75	100	95	75	100	100	75	50	85
Shahpur	90	90	90	90	30	105	110	100	30	85
Montgomery	70	50	55	105	95	115	100	80	70	95
Lyallpur	85	65	100	95	35	100	110	75	50	120
Jhang	110	70	90	95	50	105	110	85	60	100
Multan	75	100	100	70	65	60	75	90	60	100
Muzaffargarh	40	85	110	80	105	75	95	25	60	55
Dera Ghazi Khan	65	75	100	80	80	75	90	80	70	85
MEDIAN AVERAGE	80	77	92	80	77	102	92	82	70	95
<i>Unirrigated.</i>										
Hissar	35	40	100	50	..	40	15	85	15	90
Rohtak	20	30	100	15	10	50	60	55	40	65
Gurgaon	5	5	110	60	35	100	60	60	50	50
Karnal	20	55	80	80	30	120	70	70	95	80
Ambala	30	80	90	85	60	90	100	100	95	95
Hoshiarpur	70	90	70	75	90	80	105	115	95	95
Jullundur	70	80	85	40	50	100	60	60	55	90

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[Continued.]

ANNEXURE II—contd.

PUNJAB	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
<i>Unirrigated—contd.</i>										
Ludhiana	85	100	100	70	45	115	80	50	60	100
Ferozepore	95	55	80	55	55	80	80	75	60	80
Lahore	35	50	70	55	25	20	60	55	80	100
Amritsar	55	50	75	110	25	100	75	75	90	70
Gurdaspur	90	90	75	70	100	100	85	110	100	100
Sialkot	50	75	80	75	45	100	85	100	90	95
Gujranwala	50	65	85	75	15	80	80	90	60	85
Gujrat	75	75	100	95	75	100	85	50	45	75
Shahpur	80	90	55	80	20	100	100	100	30	100
Montgomery	45	40	50	110	90	50	60	65	50	50
Lyallpur	..	..	100	..	..	..	75	50	..	..
Jhang	70	50	75	75	50	100	100	60	..	105
Multan	50	55	80	70	75	45	50	70	60	90
Muzaffargarh	45	80	100	80	100	95	84	25	60	55
Dera Ghazi Khan	85	85	80	85	65	70	105	90	65	70
MEDIAN AVERAGE	50	65	80	75	50	95	80	70	60	90

MADRAS	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
Ganjam	58	66	67	58	67	75	67	67	75	82
Vizagapatam	66	75	75	67	58	75	75	75	77	94
Godavari	78	70	78	58	58	75	58	75	75	95
Kistna	75	58	58	75	67	75	67	75	75	100
Guntur	74	71	70	83	75	75	67	67	75	80
Kurnool	86	80	82	86	75	75	75	81	83	89
Bellary	58	58	75	83	67	75	75	67	75	113
Anantapur	58	50	75	75	67	75	67	50	76	107
Cuddapah	58	66	75	75	75	83	75	67	77	106
Nellore	67	58	33	67	58	67	67	66	72	98
Chingleput	..	..	..	..	75	67	..	75	42	69
South Arcot	76	75	79	79	73	75	83	66	75	84
Chittoor	..	..	..	58	50	..	75	86	58	103
North Arcot	..	..	50	50	58	75	75	67	46	78
Salem	75	67	75	67	67	75	75	67	75	105
Coimbatore	83	75	75	83	83	88	75	92	84	100
Trichinopoly	83	80	83	83	82	81	83	79	85	97
Tanjore	75	75	67	66	67	67	67	67	67	106
Madura	66	67	67	67	67	58	58	66	67	102
Ramnad	..	..	75	58	74	62	66	83	67	92
Tinnevely	75	67	67	50	58	67	67	58	58	85
Malabar	83	42	83	83	..	..	..	..	..	108
South Kanara	58	58	58	58	58	58	67	75	75	115
The Nilgiris	..	..	..	..	..	..	..	..	..	..
MEDIAN AVERAGE	75	67	75	67	67	75	67	67	75	98

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Mr. G. FINDLAY SHIRRAS.

[Continued.]

ANNEXURE II—contd.

BOMBAY	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
Ahmadabad	(a) .. (b) 33	.. 50	.. 99	.. 64	.. 25	.. 85	.. 93	.. 74	.. 41	.. 86
Kaira	(a) .. (b) 67	.. 58	.. 5	.. 39	.. 23	.. 73	.. 92	.. 75	.. 50	.. 88
Panch Mahals	(a) .. (b) 42	.. 50	.. 75	.. 48	.. 31	.. 67	.. 92	.. 75	.. 67	.. 108
Broach	(a) .. (b) 67	.. 67	.. 103	.. 76	.. 50	.. 100	.. 92	.. 100	.. 58	.. 92
Surat	(a) .. (b) 92	.. 75	.. 103	.. 74	.. 58	.. 103	.. 89	.. 85	.. 69	.. 8
West Khandesh	(a) 42 (b) ..	42 ..	83 ..	85 ..	35 ..	58 ..	104 ..	100 ..	92 ..	83 ..
East Khandesh	(a) 50 (b) ..	75 ..	100 ..	96 ..	09 ..	67 ..	92 ..	75 ..	142 ..	104 ..
Nasik	(a) 33 (b) ..	33 ..	67 ..	92 ..	62 ..	42 ..	75 ..	88 ..	98 ..	87 ..
Ahmednagar	(a) 42 (b) ..	33 ..	85 ..	43 ..	21 ..	.. 80	99 86	86 73	.. ..	.. ..
Poona	(a) 25 (b) ..	25 ..	42 ..	40 ..	10 ..	42 ..	50 ..	73 ..	54 ..	73 ..
Sholapur	(a) 25 (b) ..	33 ..	81 ..	50 ..	18 ..	33 ..	25 ..	58 ..	75 ..	67 ..
Satara	(a) 83 (b) ..	67 ..	67 ..	61 ..	56 ..	100 ..	58 ..	67 ..	73 ..	50 ..
Belgaum	(a) .. (b) 67	.. 58	.. 83	.. 85	.. 41	.. 75	.. 67	.. 83	.. 78	.. 70
Bijapur	(a) .. (b) 67	.. 58	.. 81	.. 85	.. 51	.. 58	.. 57	.. 76	.. 88	.. 82
Dharwar	(a) .. (b) 92	.. 50	.. 83	.. 69	.. 34	.. 100	.. 75	.. 83	.. 83	.. 83
Ranagiri	(a) .. (b) ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. 50
MEDIAN AVERAGE	50	50	83	69	35	70	80	76	75	83

(a) Early.

(b) Late.

SIND	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
Karachi	42	67	75	83	83	67	50	50	42	42
Larkana	67	75	75	67	50	50	58	50	50	50
Sukkur	67	75	67	67	67	50	67	75	67	67
Hyderabad	50	42	58	67	50	42	50	42	50	58
Nawabshah	..	..	..	..	..	67	50	58	50	67
Thar and Parkar	67	33	67	67	50	67	58	42	67	54
Upper Sind Frontier	67	58	83	67	67	67	67	50	50	75
MEDIAN AVERAGE	67	62	71	67	58	67	58	50	50	58

* Not constituted.

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[Continued.]

ANNEXURE II—contd.

BURMA	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
Prome	186	100	110	94	45	43	77	78	81	48
Thayetmyo	47	44	132	75	32	88	77	39	67	75
Magwe	125	75	57	43	112	100	88	43	32	88
Shwebo	..	..	50	25	..	57	100	57	88	103
Sagaing	62	87	75	50	82	94	87	87	133	93
Lower Chindwin	39	95	104	109	104	102	104	79	96	62
Mektila	75	94	81	81	106	113	88	75	38	81
Yamethin	63	81	113	92	109	112	50	93	60	59
Myingyan	50	75	75	69	94	100	73	73	73	80
Minbu	113	101	130	72	191	100	..	..	..	..
Pakokku	..	96	100	94	40	71	..	..	..	..
MEDIAN AVERAGE	63	90	100	75	99	100	87	75	73	80

NORTH-WEST FRONTIER PROVINCE	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
Hazara (a)	100	105	105	110	75	50	30	35	15	25
Hazara (b)	70	105	110	95	105	90	55	90	35	70
Peshawar (a)	80	45	140	145	160	160	165	115	40	90
Peshawar (b)	50	40	80	80	80	80	80	100	100	60
Kohat (a)	80	100	95	90	80	80	80	80	120	100
Kohat (b)	80	100	90	90	80	80	75	75	85	70
Bannu (a)	55	75	45	65	90	130	115	85	100	100
Bannu (b)	125	185	90	95	130	30	35	60	75	90
Dera Ismail Khan (a)	80	75	75	60	60	100	100	100	100	100
Dera Ismail Khan (b)	80	75	70	60	60	90	90	90	90	90
Tochi (a)	70	100	35	25	25	35	35	35	40	71
Tochi (b)	..	..	..	..	..	..	..	..	..	..
Kurram	..	..	..	..	..	..	..	..	..	..
MEDIAN AVERAGE	80	100	90	90	80	80	80	85	85	90
Irrigated.										
Hazara	100	105	105	110	75	50	30	35	15	25
Peshawar	80	45	140	145	160	100	165	115	40	90
Kohat	80	100	95	90	80	80	80	80	120	100
Bannu	55	75	45	65	90	130	115	85	100	100
Dera Ismail Khan	80	70	75	60	60	100	100	100	100	100
Tochi	70	100	35	25	25	35	35	35	40	71
MEDIAN AVERAGE	80	87	85	77	77	90	90	82	70	95
Unirrigated.										
Hazara	70	105	110	95	105	90	55	90	35	70
Peshawar	50	40	80	80	80	80	80	100	100	60
Kohat	80	100	90	90	80	80	75	75	85	70
Bannu	125	185	90	95	130	30	35	60	75	90
Dera Ismail Khan	80	75	70	60	60	90	90	90	90	90
MEDIAN AVERAGE	80	100	90	90	80	80	75	90	85	70

(a) Irrigated.

(b) Unirrigated.

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Mr. G. FINDLAY SHIRRAS.

[Continued.]

ANNEXURE II—concl'd.

CENTRAL PROVINCES AND BERAR	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
Sangor	66	79	122	116	81	77	66	98	120	85
Damoh	30	77	100	100	100	85	65	90	115	97
Jubbulpur	60	62	115	101	100	78	65	99	83	90
Mandla	60	80	100	100	100	100	60	100	100	100
Seoni	58	55	83	70	100	80	75	100	100	57
Narsinghpur	76	90	150	80	95	60	90	75	85	69
Hoshangabad	45	74	91	39	90	60	58	80	110	65
Nimar	38	87	100	90	90	70	81	90	112	87
Betul	47	75	120	90	110	90	75	100	105	90
Chindwara	67	77	90	89	107	88	67	107	100	60
Wardha	60	80	100	55	105	90	90	90	90	75
Nagpur	71	84	90	60	120	100	90	100	85	60
Chanda	41	30	120	95	90	100	100	75	90	60
Bhandara	30	50	100	91	105	80	60	90	90	60
Balaghat	..	..	60	100	90	100	100	100	100	100
Drug	69	95	93	90	80	95	90	85	100	100
Raipur	60	98	120	100	88	90	78	87	100	106
Bilaspur	60	60	65	65	65	59	50	51	75	75
Akola	50	78	100	70	80	80	100	100	120	90
Amraoti	52	62	82	65	120	119	75	89	96	66
Buldana	52	88	88	92	82	75	105	82	105	88
Yectmal	41	62	62	62	100	75	85	90	100	75
Central Provinces and Berar	51	74	88	71	98	88	80	92	103	78
MEDIAN AVERAGE	58	77	100	90	98	83	76	90	100	80

ANNEXURE III.

Resolution of the Board of Revenue, Madras, No. 2, dated 5th January, 1915.

The Director of Agriculture points out defects in the present system of preparing forecast returns and proposes certain arrangements for improving them. The Board accepts these proposals generally and resolves to issue the following instructions in supersession of those already issued :—

(a) Each Revenue Inspector should maintain a register for his firka in the form given in appendix A to this resolution, in which the area cultivated with the seven* crops in respect of which forecast reports are published should be posted every month from the cultivation accounts received from the karnams. In those months in which forecast returns are due, the area cultivated up to the end of the month should be entered in the column provided for the purpose. In the case of villages from which the cultivation accounts are not received in time, the Revenue Inspector should frame estimates of the area cultivated as follows :—

Area in the previous year in such villages $\times$ area in the current year in the other villages of the firka
the total area in the other villages in the previous year.

These estimated figures should be entered in pencil to show that they are not actual figures and when cultivation accounts are subsequently received the actual figures should be entered in ink. This register should be forwarded to the taluk office not later than the 28th in the months of July, August, September, November, December, January and March according to the crops dealt with.

(b) In the taluk office, a register should be maintained in the form given in appendix B to this resolution, in which the figures received from the Revenue Inspectors should be posted for each firka. If in any case the firka register is not received in time, an estimate should be made of the area in the firka in the manner described in the preceding paragraph for villages. The firka registers should be returned to the Revenue Inspectors immediately after the despatch of the returns to the Director of Agriculture. When submitting the forecast returns, the Tahsildar should report the percentage of the number of villages for which estimates have been framed to the total number of villages in the taluk. When actual figures are received later they should be entered in the taluk register.

2. Both the taluk and the firka registers should contain a sufficient number of pages so that they may be continued for a period of five years. The figures of the preceding years will thus be readily available for framing estimates when necessary. One page should be allotted to each crop.

3. All raiyatwari villages and such of the zamindari and whole inam villages as submit monthly cultivation accounts should be entered in column 2 of the "firka register." In the case of non-raiyatwari villages which do not submit monthly cultivation accounts, the percentage of which to the total number of villages in the taluk should be reported by the Tahsildar, estimates of the area cultivated under the several crops will be framed by the Director of Agriculture on the basis of the previous year's cultivation with such modifications as the state of the season demands.

* Cotton, gingelly, rice, sugarcane, groundnut, indigo and castor.

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Mr. G. FINDLAY SHIRRAS.

[Continued

APPENDIX A TO ANNEXURE III

FIRKA REGISTER OF FORECAST CROPS.

Cotton.

Area sown in each month.

Survey numbers.	JUNE IN THE TALUK OFFICE. Names of villages in the firka.	FIRST SOWINGS, 29TH JULY.						SECOND SOWINGS, 20TH SEPTEMBER.			FIRST OUTTURN, 28TH NOVEMBER.				SECOND OUTTURN, 28TH JANUARY.				
		February.	March.	April.	May.	June.	July.	Total to date, viz., of columns 3 to 8.	August.	September.	Total to date, viz., of columns 9 to 11.	October.	November.	Total to date, viz., of columns 12 to 14.	Estimated outturn in annas.	December.	January.	Total to date, viz., of columns 15, 17 and 18.	Estimated outturn in annas.
1	- 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
		Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres		Acres	Acres	Acres	

Total area to date and estimated outturn.
Date of despatch to taluk office.
Survey numbers of villages for which estimates of areas have been given.
Revenue Inspector's initials.
Taluk Head Accountant's initials.

Imperial.]

Mr. G. FINDLAY SHIRRAS.

[Continued.

APPENDIX B TO ANNEXURE III.

TALUK POSTING REGISTER OF FORECAST CROPS.

Area sown.

Serial number	NAME OF CROP	COTTON					
	DUE AT THE OFFICE OF THE DIRECTOR OF AGRICULTURE, MADRAS, ON	1ST AUGUST (FIRST SOWINGS)	1ST OCTO- BER (SECOND SOWINGS)	1ST DECEMBER (FIRST OUTTURN)		1ST FEBRUARY (SECOND OUTTURN)	
	Names of firkas in the taluk	February to July	February to September	February to November	Estimated outturn in annas	February to January	Estimated outturn in annas
1	2	3	4	5	6	7	8
		Acres	Acres	Acres		Acres	

Total area to date of forecast and estimated outturn.
Date of despatch to the Director of Agriculture.
Percentage of the number of villages for which estimates have been framed to the total number of villages in the taluk.
Taluk Head Accountant's initials.

ANNEXURE IV.

Copy of letter Dis. No. 642, dated the 18th March 1910, from the Director of Agriculture, Madras, to the Board of Revenue (Revenue Settlement, Survey, Land Records and Agriculture), Madras.

Mistake in the cotton outturn reports for the Guntur District.

In reply to Board's reference No. 2260 of 29th September 1909, regarding the discrepancy in the cotton outturn figures in the Guntur District, I have the honour to report as follows :—

2. In his letter of 9th March 1909, the Deputy Director of Agriculture, Northern Division, pointed out that there was a serious discrepancy between the official outturn reports of the cotton crop of the Guntur District and the figures given by the Associated Presses of Guntur.

Official final outturn report.		Return of Presses.
1907-08	21,060 bales	64,232
1908-09	16,082 "	62,899

The Government estimate thus falls short of the amount of cotton actually baled in Guntur by 43,172 and 46,817 bales for these two years apart from the not inconsiderable amount which is consumed in the villages by hand spinners and weavers, besides what finds its way into the market by other trade channels.

3. The Collector of Guntur, to whom the matter was referred, reported that a scrutiny of the figures of the Guntur presses for the previous six years showed that the normal amount of cotton annually pressed at Guntur might be taken as 60,000 bales of 400 lbs. each. From this total might be deducted 13,421 bales which are the produce of the Nizam's Dominions and the adjacent districts of Kurnool and Nellore. The balance, viz., 46,579 bales might be taken as the produce of 192,520 acres in the Guntur District and 5,365

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[Continued]

acres in the Kistna District. The actual amount by which the official figures fell short of the number of bales actually pressed in Guntur was this :—

Year	Bales
1907-08	25,519
1908-09	30,497

4. In his letter of 7th September last, the Collector attributed this error to three causes :—

- (1) The failure of the system under which the karnam reports the crops. His standard of a normal crop is what a crop would be on land best suited to the crop, and also a crop which has not suffered from drought, insect pests, etc.
- (2) The fact that the standard outturn fixed, viz., fifty lbs. of lint per acre, was too low.
- (3) The fact that cotton was often grown as a mixed crop.

5. Taking these causes in order, the inaccuracy of the karnam's return is a factor which will never be eliminated, whatever the system of reporting may be. It is due to two causes, first the ineradicable instinct which every cultivator has that it is imprudent to tell the whole truth to any official. The karnam must rely on the estimates of the cultivators, as usually he is not an expert cultivator himself. It is also partly due to the idea which the growers have that prices will rise if a short crop is reported.

6. The second cause, that the standard normal yield of fifty lbs. per acre is too low, is a matter which, in the absence of any proof, it is impossible to decide. Before reporting to the Board that this rate might continue to be accepted, I consulted the leading cotton firms in Madras and they were not able to suggest any alteration, but none of them have much knowledge of Guntur conditions. No experiments have been conducted in the Guntur District by the Agricultural Department and, in view of the consensus of local opinion now reported by the Collector, the standard outturn may be raised to 75 lbs.

7. The third cause reported by the Collector, the practice of growing cotton as a mixed crop is, I am convinced, the most important source of error. In 1907-08, an experiment was carried out at the Hagari Agricultural Station to test this point. On one plot cotton was sown as a pure crop and on another it was sown in the usual local method, viz., one row of cotton to two rows of *korra* (*Setaria Italica*). The yield of the pure cotton was 267 lbs. of *kapas* per acre, while the mixed cotton field gave 242 lbs. Under the existing system of reporting mixed crops, the karnam would report the mixed crop as one-third of an acre of cotton and two-thirds of an acre of *korra*. Supposing he was in an optimistic frame of mind, he would estimate the crop of cotton at twelve annas of the normal on one-third of an acre (one-third of 50 lbs.) or 16½ lbs. of lint per acre (the actual yield at 25 per cent. of lint to *kapas* was 60½ lbs.). The reason why the mixed crop yields almost as much as the pure crop is that the latter is always sown far too thick, whereas the mixed crop has ample room, after the *korra* is harvested, to spread out and develop. The *korra* crop is harvested while the cotton is still young. Provided the season is moderately favourable, the cotton starts forward as soon as the *korra* is cut, and having ample space and light, as compared with the thickly sown pure crop, the plants spread out and yield almost as good a crop as if there had been no *korra* crop on the ground at all. *Korra* is, of course, a surface feeder, and interferes little with the deep-rooted cotton crop, provided that there is enough moisture for both.

8. In view of these facts, I suggested to the Collector that it would more nearly represent the true facts if the karnam were to report a field of this mixture as two-thirds of an acre of cotton and one-third *korra*. I also asked him what were the usual mixtures sown with cotton in Guntur. His reply, copy of which is submitted for information, states that when cotton is sown with *korra* or *cumbu*, the favourite mixtures, the karnam estimates one-third of the area as cotton and two-thirds as *korra* or *cumbu*, and suggests that it would be better that the karnams should make no attempt to distribute these areas. The mixtures where cotton forms the predominating crop may be taken, as they are now, as pure cotton. When *gogu* or horsegram is sown along with cotton, the cotton is sown in every row, and only a little horsegram or *gogu* is mixed with it in the drill. Other mixed crops may be reported as "mixed crops of cotton." The mixed crops might be converted into corresponding areas of pure cotton according to a percentage to be arrived at by the Agricultural Department. For the present, I would suggest that the outturn for pure crops be taken as 75 lbs. of lint per acre, and a mixed crop converted on the assumption that it will give two-thirds of the yield of the pure crop. If the present system is to be continued, this would give less unsatisfactory results than any other.

9. At the same time, in view of the facts now brought to light, I would suggest again that the present system of attempting to give outturn reports should be re-considered. They are treated with ridicule by those in the trade, and serve no useful purpose. In paragraph 11 of its proceedings No. 190 of 23rd June 1899, the Board itself remarked that "the Board attaches small importance to the quantitative estimates and is of opinion that attempts to frame such estimates are out of place in official reports on the condition and prospects of the crops. Those interested in the trade are far better qualified to frame such estimates and it would, the Board considers, suffice if the official report merely stated the area figures and gave a qualitative estimate of the probable yield."

10. This would meet the requirements of the leading firms in Madras. Messrs. Binny & Co. wrote in 1908 "We think that if Government give the area under cultivation and the condition of the crop it would meet all requirements." Messrs. Dymes & Co. wrote "We attach importance only to the sowing reports. Long experience has taught us that outturn reports are quite unreliable. We are quite uninfluenced by the reports of anybody outside the firm. We therefore entirely agree with you that the official outturn forecast may, without disadvantage to anybody, be given up."

ANNEXURE V.

Extracts from the United States Department of Agriculture Circular No. 17—January 20th, 1915, on Government Crop Reports.

Methods of Crop Reporting.

The reports issued by the Bureau of Crop Estimates during the year include data relating to acreages, conditions, yields, supplies, qualities, and values of farm crops, numbers by classes, condition, and values of

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[Continued.]

farm animals, etc. The data upon which such estimates are based are obtained through a field service consisting of a corps of paid State field agents and crop specialists and a large body of voluntary crop reporters composed of the following classes: County reporters, township reporters, individual farmers, and several lists of reporters for special inquiries.

The field service consists of trained field agents, one assigned to a single State or group of smaller States which in the aggregate corresponds in area and crop production to one of the larger States, who devote their entire time to the work and who travel throughout their territory during the crop season, personally inspecting crop areas, conferring with State and local authorities, private and commercial agencies, and others interested in crop-reporting work. Each agent supplements his own observation with reports from a corps of selected crop reporters in his territory, who report directly to him and are wholly independent of the regular crop reporters who report directly to the bureau.

In addition to the regular force of State field agents, the bureau has a small force of crop specialists, one or more for each of the important special crops, such as cotton, tobacco, rice, and truck crops, possessing the same qualifications and performing the same duties as the field agents, but devoting their entire time to specializing on the particular crops to which they are assigned and travelling throughout the entire region in which they are grown. These crop specialists also have selected lists of crop correspondents reporting directly to them.

Both the State field agents and the crop specialists are in the classified service and are appointed only upon certification by the Civil Service Commission after a rigid competitive examination. They are selected for their special training and qualifications for the work and as they acquire knowledge and experience, will become recognized authorities in crop production in each State.

There are approximately 2,800 counties of agricultural importance in the United States. In each the department has a principal county reporter who maintains an organization of several assistants. These county reporters are selected with special reference to their qualifications and constitute an efficient branch of the crop reporting service. They make the county the geographical unit of their reports, and, after obtaining data each month from their assistants and supplementing these with information obtained from their own observation and knowledge, report directly to the department at Washington.

In practically all of the townships and voting precincts of the United States in which farming operations are extensively carried on the department has "township" reporters who make their immediate neighbourhood area with which they are personally familiar the geographical basis of reports, which they also send directly to the department each month. There are about 32,000 township reporters.

Finally, at the end of the growing season a large number of individual farmers and planters report on the results of their own individual farming operations during the year; valuable data are also secured from 30,000 mills and elevators.

Because of the specialized nature of the cotton crop, the reports concerning it are handled separately from reports on all other crops. In addition to the regular estimates of the State agents, the cotton crop specialist, and the county and township reporters, the bureau obtains reports on acreage, yields, percentage ginned, etc., from many thousand special reporters who are intimately concerned in the crop, including practically all the ginner.

Transmission of Reports to Bureau by Correspondents.

Previous to the preparation and issuance of the bureau's reports each month the correspondents of the several classes send their reports separately and independently to the department at Washington.

In order to prevent any possible access to reports which relates to speculative crops, and to render it absolutely impossible for premature information to be derived from them, all of the reports from the State field agents, as well as those from the crop specialists, are sent to the Secretary of Agriculture in specially prepared envelopes. By an arrangement with the postal authorities, these envelopes are delivered to the Secretary of Agriculture in sealed mail pouches. These pouches are opened only by the Secretary or Assistant Secretary, and the reports, with seals unbroken, are immediately placed in a safe in the Secretary's office, where they remain sealed until the morning of the day on which the bureau report is issued, when they are delivered to the statistician by the Secretary or the Assistant Secretary. The combination for opening the safe in which such documents are kept is known only to the Secretary and the Assistant Secretary of Agriculture. Reports from field agents and crop specialists residing at points more than 500 miles from Washington are sent by telegraph in cipher. The reports from the county correspondents, township correspondents and other voluntary crop reporters are sent to the Chief of the Bureau of Crop Estimates by mail in sealed envelopes.

Preparation of Reports.

The reports received by the department from the different classes of individual correspondents are tabulated and compiled and the figure for each separate State computed. After the reports from the different counties are tabulated, a true weighted figure for the State is secured by taking into consideration the relative value which the total acreage or production of each county in the State bears to the total acreage or production of the State. The weight figure showing the value of the county is applied to the acreage, yield per acre, or condition, whichever it may be, and from the totals of the weights and the extensions a weighted average for the State is ascertained. The averages for the speculative crops (corn, wheat, oats, and cotton) are determined by computers who do not know the particular State to which their figures relate.

The work of making the final crop estimates each month culminates at sessions of the crop reporting board, composed of five members, presided over by the statistician and chief of bureau as chairman, whose services are brought into requisition each crop-reporting day from among statisticians and officials of the bureau, and field agents and crop specialists who are called to Washington for the purpose.

The personnel of the board is changed each month. The meetings are held in the office of the statistician, which is kept locked during sessions, no one being allowed to enter or leave the room or the bureau, and all telephones being disconnected.

When the board has assembled, reports and telegrams regarding speculative crops from field agents and crop specialists, which have been placed unopened in a safe in the office of the Secretary of Agriculture, are delivered by the Secretary, opened, and tabulated; and the figures, by States, from the several classes of correspondents and agents relating to all crops dealt with are tabulated in convenient parallel columns; the board is thus provided with several separate estimates covering each State and each separate crop, made independently by the respective classes of correspondents and agents of the bureau, each reporting for a territory or geographical unit with which he is thoroughly familiar.

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Abstracts of the weather condition reports in relation to the different crops, by States, are also prepared from the weekly bulletins of the Weather Bureau. With all these data before the board, each individual member computes independently, on a separate sheet or final computation slip, his own estimate of the acreage, condition, or yield of each crop, or of the number, condition, etc., of farm animals, for each State separately. These results are then compared and discussed by the board under the supervision of the chairman, and the final figures for each State are decided upon.

The estimates by States as finally determined by the board are weighted by acreage or other figures representing the relative importance of the crop in the respective States, the result for the United States being a true weighted average for each subject.

Method of Issuing Reports.

Reports in relation to cotton, after being prepared by the crop reporting board and personally approved by the Secretary of Agriculture, are issued on or about the first day of each month during the growing season, and reports relating to the principal farm crops and live stock about the seventh or eighth day of each month. In order that the information contained in these reports may be made available simultaneously throughout the entire United States, they are handed, at an announced hour on report days, to all applicants and to the Western Union Telegraph Company and the Postal Telegraph Cable Company, which have branch offices in the Department of Agriculture, for transmission to the exchanges and to the press. These companies have reserved their lines at the designated time, and forward immediately the figures of most interest. A multi-graph statement, containing such estimates of condition or actual production, together with the corresponding estimates of former years for comparative purposes, is prepared and mailed immediately to newspaper publications.

The crop estimates for the State and for the United States as a whole are telegraphed immediately to the Weather Bureau station director of each State, in whose office copies are printed and mailed to all the local papers in the State, so that the crop estimates of the bureau are published throughout the United States within 24 hours of their issuance.

Promptly after the issuing of the report, it, together with other statistical information of value to the farmer and the country at large, is published in the Agricultural Outlook, a publication of the Bureau of Crop Estimates, under the authority of the Secretary of Agriculture. An edition of over 225,000 copies is distributed to the correspondents and other interested parties throughout the United States each month.

Bases of Crop Estimates.

Acreage Estimates.

For many years, in fact since the bureau was organized in 1862, it has been the practice to accept the estimates of acreage planted to different crops as reported by the Bureau of the Census every ten years.* Then, in the first year following the census, the crop reporters of this bureau would estimate the acreage planted as a percentage of the acreage reported by the census for the preceding year; the second year following the census the acreage would be estimated as a percentage of the acreage estimated the preceding year, and so on until figures for the next census are available. Theoretically, if there is no bias or tendency to under-estimate or overestimate on the part of crop reporters, the acreage estimate by this method for the tenth year after a census would agree with the acreage reported by the census for that year. A weak point in the system which has long been recognized is the fact that individual crop reports are not free from bias, and there appears to be a fairly uniform tendency to either overestimate or underestimate the acreage, the result being a cumulative error which in ten years is apt to result in a wide discrepancy between the estimates of this bureau and the figures of the census. To illustrate, if the Bureau of the Census should report 10,000,000 acres planted to a given crop, and there should be a uniform tendency on the part of the crop reporters of this bureau to underestimate the acreage of this crop an average of two per cent. annually, this bureau might estimate the acreage as 9,800,000 acres the first year after the census, as 9,604,000 acres the second year, as 9,412,000 acres the third year, and so on until the tenth year, when the bureau's estimate for the crop would be 8,170,000. If during the ten-year period there had actually been no change in the acreage planted to the particular crop in question, and the census should again report an acreage of 10,000,000, the result would be a manifest discrepancy of 1,830,000 acres between the figures of this bureau and those of the census. Further discrepancies would appear in the yield per acre and the total yield.

At or near the close of harvest each year, agents and crop reporters of the bureau estimate the yield per acre, in bushels, pounds, or tons, according to the nature of the product. The estimate of the total production is readily obtained by multiplying the yield per acre thus obtained by the previously estimated total number of acres.

It will be observed that the method of estimating the yield per acre differs materially from the method of estimating the total acreage, the acreage estimate being based upon a percentage of the preceding year's acreage, thus carrying on, from year to year, any error made in any previous year, whereas the yield-per-acre estimate, being based upon the one year and not referring to any former year, is not affected by any error of a previous year. A constant yearly under-estimate, of say, two per cent. in the acreage will be magnified to a difference of about ten per cent. in five years and twenty per cent. (approximately) in ten years. A constant yearly underestimate of two per cent. in the yield per acre will not be magnified in five or ten years, but, on the other hand, in comparing one year's estimated yield with another the errors will be neutralized; that is, the effect would be the same, so far as comparative value is concerned, as though no error had occurred. In short, biased errors in acreage estimates by percentage grow from year to year; biased errors in yield-per-acre estimates neutralize each other.

The Bureau of the Census enumerates total acres and total production of crops; if yield per acre is wanted it is obtained by dividing the production by the acres. The Bureau of Crop Estimates obtains directly from its agents and correspondents estimates of acreage (as described) and yield per acre and arrives at the total production by multiplying acreage by yield per acre.

Notwithstanding the difference in methods of procedure, the estimates of yield per acre obtained by the Bureau of Crop Estimates in census years and the figures of yield per acre obtained by the census, with few exceptions, do not vary widely.

* Prior to 1880 the census did not show acreage of crops—merely production; hence, in the earlier years, the acreage basis was obtained by dividing the census report of total production by an estimated yield per acre.

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[Continued]

ANNEXURE VI.

Forms for collection of information from non-official reports in the United Provinces.

FIRST FORECAST OF COTTON.

پیشبندی اول فصل کپاس بابت ماہ جولائی سنہ ۱۹۱۶ء بابت ضلع

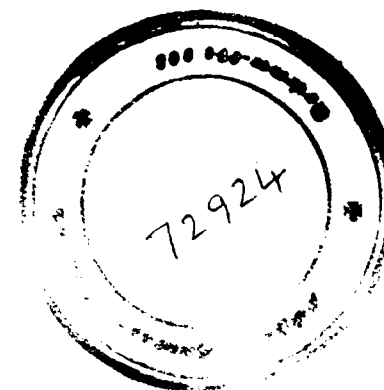
(نقشہ ہذا تاریخ ۳۱ - جولائی ۱۹۱۶ء تک دفتر دائرکری میں ضرور واپس آجانا چاہیئے)

حالات فصل کپاس	حصہ ضلع جسکی بابت کیفیت ہذا مرتب کی گئی
English translation of questions.	سوالات
(1) Did the rain fall in time or come late?	۱ - بارش آپ کے حلقہ میں وقت پر شروع ہوئی یا پچھل کر؟
2. State the date at which the sowing of the crop began, and whether it was early, normal or late.	۲ - عموماً تخمیری کس تاریخ سے شروع ہوئی اور آیا تخمیری وقت پر یا اس سے پہلے یا پچھل کر شروع ہوئی -
3. How did the seed germinate?	۳ - تخم کیسا جما؟
4. What was the state of rains during July?	۴ - ماہ جولائی میں بارش کیسی ہوئی؟
5. Has proper weeding been done or did the rains interfere with it?	۵ - نکائی اچھی طرح ہوئی یا بارش سے کوئی ہرج راقع ہوا؟
6. Does the cotton area this year exceed or fall short of last year's area? If less, by what per cent? If more, by what per cent? State also the cause of the increase or decrease.	۶ - سال حال میں جو رقبہ بونا گیا ہے وہ رقبہ سالگذشتہ سے آپ کے انداز میں کم ہے یا زیادہ - اگر کم ہے تو فیہ دی کس قدر؟ اور اگر زیادہ ہے تو فیصدی کس قدر؟ رقبہ میں کمی یا بیشی کا تخمینہ ہوشیاری سے بعد تحقیقات کے کرنا چاہیئے اور بمقابلہ سالگذشتہ کے جو کمی یا بیشی ہو اسکی وجہ لکھنا چاہیئے -
موضع	موضع
تاریخ	تاریخ

R

J781.2N17

N20.5.2,2



[Imperial.]

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[Continued.]

[Imperial.]

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[Continued.]

SECOND FORECAST OF COTTON.

پیش بندی دوم فصل کپاس بابت ماہ ستمبر سنہ ۱۹۱۶ء بابت ضلع

نقشہ ہذا دفتر ڈائریکٹری میں تاریخ ۲۵ - ستمبر سنہ ۱۹۱۶ء تک ضرور آنا چاہیئے ۔

حالات فصل کپاس		حصہ ضلع جسکی بابت کیفیت ہذا مرتب کی گئی
English translation of queries.	سوالات Queries (Urdu).	
1. Was the rain heavy in August and September or scanty ?	۱ - ماہ - اگست و ستمبر میں کثرت سے بارش ہوئی یا کم ؟	
2. What effect had the rains on the present crop ?	۲ - بارش کا فصل ہذا پر کیا ہوا ؟	
3. How was weeding done in August and September ?	۳ - نکائی ماہ اگست و ستمبر میں کیسی ہوئی ؟	
4. Did anything injurious occur to cotton flowers ?	۴ - پھولوں کو کسی وجہ سے نقصان تو نہ پہونچا ؟	
5. Have the cotton pods appeared in your circle, and if so, what is the state ?	۵ - آپ کے حلقہ میں گلبندي یا ٹینٹ ابھی شروع ہوئی یا نہیں اور اگر نمود ہوئی تو اوسکی کیا حالت ہے ؟	
6. What is the state of the cotton crop ? If 16 annas represent a normal* crop, what outturn is expected this year ?	۶ - فصل کپاس کی حالت اب کیسی ہے اگر * معمولی فصل ۱۶ آنہ قرار دیجائے تو آپ کی دانست میں اس سال کئی آنہ ہوگی ؟	
	دستخط تاریخ	
	موضع	
	ضلع	

* معمولی فصل سے وہ فصل مراد ہے - جسکی اوس سال پیدا ہونے کی آمید موجودہ حالات میں ہو اگر بارش اور موسم اوس طرح کے ہوں جو اوس طبقہ آراضی کے واسطے عام طور پر ہوا کرتے ہیں یعنی نہ بہت موافق ہوں نہ خلاف ۔

* Normal crop means the crop which in existing circumstances might be expected to be attained in the year if the rainfall and seasons were of a character ordinary for the tract under consideration, that is neither very favourable nor the reverse.

بسیغہ پیکت پوسٹ بیرنگ

بکار سرکار

بمقام لکھنؤ

بخدمت ڈائریکٹر صاحب محکمہ کاغذات دیہی و زراعت صوبجات متحدہ آگرہ و اردھہ

صنع

ساکن

نام بیچنے والے کا

Imperial.]

Mr. G. FINDLAY SHIRRAS.

[Continued.]

بصیغہ پیکت پوسٹ بیرنگ

بکار سرکار

بمقام لکھنؤ

بخدمت ڈائریکٹر صاحب محکمہ کاغذات دیہی و زراعت صوبجات متحدہ، آگرہ و اردھہ

ضلع

سائ

نام رپورٹ کنندہ

Imperial.]

Mr. G. FINDLAY SHIRRAS.

[Continued.]

Statement of area under cotton.

District Tahsil Pargana.

نقشہ رقبہ کپاس بابت حلقہ
پرگنہ تحصیل ضلع
سنہ ۱۳ فصلی

Previous year.	Current year.	
سال گذشتہ سنہ ۱۳ فصلی ایتر	سال حال سنہ ۱۳ فصلی ایتر	
		Cotton. رقبہ کپاس
		Cotton Arhar. رقبہ کپاس مع ارہر
		Total. میزان ...
		تاریخ دستخط گردار قانونگر تحصیل ضلع

ہدایات

(۱) سال گذشتہ کا رقبہ کپاس و کپاس مع ارہر قبل سے رجسٹرار قانونگر سے حاصل کر لینا چاہیئے۔ رجسٹرار قانونگر کو چاہیئے کہ ایسا ایک نقشہ تیار کر کے جسمیں ہر پٹواری کے حلقہ کا رقبہ مذکورہ جدا جدا دکھایا گیا ہوتا کہ اگر کسی حلقہ کا رقبہ سال حال نہ بتایا جاسکے تو اسکا رقبہ سال گذشتہ حسب ہدایت نمبر ۲ میزان سے خارج کیا جاسکے۔

(۲) اگر اس نقشہ کے بھیجنے کے وقت کسی پٹواری کے کاغذات اسقدر نامکمل ہوں کہ رقبہ زیر کاشت کپاس و کپاس مع ارہر نہ معلوم ہو سکے تو اس کے کاغذات کی تکمیل کا انتظار نہ کر بلکہ بغیر اس پٹواری کے حلقہ کا رقبہ درج کیئے ہوئے یہ نقشہ بھیج دے لیکن اس امر کی نہایت احتیاط کرنی چاہیئے کہ جس حلقہ کا رقبہ نہ دریافت ہو سکے اس کا رقبہ سال گذشتہ میزان سے خارج کر دیا جائے تاکہ دوسرے برسوں کے رقبہ کا مقابلہ کرنے میں دھوکا نہ ہو۔

(۳) یہ نقشہ ہر سال ۲۷ - ستمبر کو یا اگر ممکن ہو تو اس کے قبل صاحب ڈائریکٹر بہادر کے دفتر میں بمقام لکھنؤ ضرور بالضرور بذریعہ ڈاک روانہ کر دیا جائے کسی حالت میں تاخیر نہ ہونی چاہیئے۔

(۴) نقشہ روانہ کرنے کا پتہ پست پر درج ہے۔ یہ نقشہ تہ کر کے پیکٹ کی شکل میں بنادیا جائے اور قبل ڈاک میں بھیجنے کے پست پر ایسا نام و پتہ و تاریخ لکھ دے۔ اگر سرکاری گت آسانی سے ہم نہ پہنچ سکے تو بیرنگ روانہ کر دے۔

Imperial.]

Mr. G. FINDLAY SHIRRAS.

[Continued.]

بصیغہ پیکت پوست

بکار رکار

بمقام لکھنؤ

بخدمت سب ڈائریکٹر بہادر محکمہ کاغذات دیہی و زراعت و سرحدات متحدہ آگرہ و اودھ

ضلع

تخصیل

نام گرواڑ قائلوہو

تاریخ

Imperial.]

Mr. G. FINDLAY SHIRRAS.

[Continued.]

بصیغہ پیکت پوست بیرونک

بکار سرکار

بمقام لکھنؤ

بخدمت ڈائریکٹر صاحب محکمہ کاغذات دیہی و زراعت و سرحدات متحدہ آگرہ و اودھ

ضلع

ساکن

نام رپورٹ کنندہ

Imperial.]

Mr. G. FINDLAY SHIRRAS.

[Continued.]

NORMAL OUTTURN OF COTTON (CLEANED) PER ACRE.

نقشہ اوسط معمولی پیداوار فی ایکڑ روٹی ممالک متحدہ کے اوزن اضلاع میں
جہاں فصل کپاس خاص کر ہوئی جاتی ہے

نام ضلع	پیداوار روٹی فی ایکڑ	
	آپاشی شدہ	غیر آپاشی شدہ
سہارنپور	۶۰	۶۰
مظفرنگر	۷۰	۱۰۰
میرٹھ	۷۰	۱۰۰
بلندشہر	۶۵	۱۰۰
علی گڑھ	۶۵	۱۰۰
متھرا	۷۵	۱۱۵
آگرہ	۷۵	۱۱۵
میں پوری	۸۰	۱۱۵
ایتھ	۸۰	۱۱۵
بریلی	۶۰	۱۱۵
بجنور	۶۰	۱۱۵
بدایوں	۶۰	۱۱۵
مراد آباد	۶۰	۱۱۵
فرخ آباد	۸۰	۱۱۵
اٹارہ	۸۰	۱۱۵
کانپور	۶۰	۱۱۵
فکیر پور	۶۰	۱۱۵
الہ آباد	۶۰	۱۱۵
جہانسی	۶۰	۱۱۵
جالون	۶۰	۱۱۵
ہمیر پور	۶۰	۱۱۵
باندہ	۶۰	۱۱۵
نیننی تال	۵۵	۱۱۵
اناؤ	۵۵	۱۱۵
ہردوئی	۵۵	۱۱۵

Imperial.]

Mr. G. FINDLAY SHIRRAS.

[Continued.]

THIRD FORECAST OF COTTON.

پیشبینی سوم فصل کپاس بابت ماہ نومبر سنہ ۱۹۱۶ء بابت ضلع

نقشہ ہذا دفتر انٹرکٹری میں تاریخ ۲۰ نومبر سنہ ۱۹۱۶ء تک ضرور آجانا چاہیئے
اور نام فریسنڈہ اور پتہ صاف صاف لکھنا چاہیئے

حالات فصل کپاس	معدہ ضلع جسکی بابت کیفیت ہذا مرتب کی گئی	سوالات	English translation of questions.
۱۔ دوسری پیشبینی کے بعد بارش آپ کے حلقہ میں کیسی ہوئی اور کپاس کو اس سے کیا نفع یا نقصان ہوا؟		۱۔ آپ کے حلقہ میں بنائی کپاس کی کس تاریخ کو شروع ہوئی اور آیا بنائی امسال وقت پر یا اس سے پہلے یا بعد میں شروع ہوئی؟	1. How did the rains, which fell after the second forecast report, affect the cotton crop?
۲۔ آپ کے حلقہ میں بنائی کپاس کی کس تاریخ کو شروع ہوئی اور آیا بنائی امسال وقت پر یا اس سے پہلے یا بعد میں شروع ہوئی؟		۲۔ کوئی ایسی بات تو نہیں ہوئی جس کی وجہ سے پھولوں کو نقصان پہنچا؟	2. On what dates was the cotton picking begun in your circle, and whether it was early, normal or late?
۳۔ کوئی ایسی بات تو نہیں ہوئی جس کی وجہ سے پھولوں کو نقصان پہنچا؟		۳۔ پیداوار امسال کیسی ہوئی یعنی روٹی کے تار صفائی لنبائی اور مضبوطی میں کیسے ہیں؟	3. Did anything injurious occur to cotton flowers?
۴۔ پیداوار امسال کیسی ہوئی یعنی روٹی کے تار صفائی لنبائی اور مضبوطی میں کیسے ہیں؟		۴۔ آپکا آخری تخمینہ پیداوار کا کیا ہے؟ اگر *معمولی فصل سولہ آنہ اقرار دیجئے تو امسال کی آنہ کی فصل ہوگی؟ تخمینہ کرنے میں اپنے ضلع کے معمولی اوسط پیداوار فی ایکڑ کا لحاظ رکھیں کہ نقشہ ہذا کی پشت پر درج ہے	4. What is the condition of the strength of cotton fibres, of its length and cleanli- ness, this year?
۵۔ آپکا آخری تخمینہ پیداوار کا کیا ہے؟ اگر *معمولی فصل سولہ آنہ اقرار دیجئے تو امسال کی آنہ کی فصل ہوگی؟ تخمینہ کرنے میں اپنے ضلع کے معمولی اوسط پیداوار فی ایکڑ کا لحاظ رکھیں کہ نقشہ ہذا کی پشت پر درج ہے		دستخط	5. What is the final estimate of the out- turn of cotton? If 16 annas represent a normal* crop, what outturn is expected this year? In framing this estimate you should keep in view the standard of outturn of cotton per acre of your district which is given on the reverse of this form.
		موضع	
		ضلع	
		تاریخ	

* معمولی فصل سے وہ فصل مراد ہے جس کی اوس سال پیدا ہونے کی امید موجودہ حالات میں ہو اگر بارش اور موسم اوس
طرح کے ہوں جو اوس طبقہ اراضی کے واسطے عام طور پر ہوتا ہے، یعنی نہ بہت موافق نہ خلاف۔

* Normal crop means the crop which in existing circumstances might be expected to be attained in the year if the rainfall and
seasons were of a character ordinary for the tract under consideration, that is neither very favourable nor the reverse.

Imperial.]

Mr. G. FINDLAY SHIRRAS.

[Continued.]

ANNEXURE VII.

Comparison of outturns per acre of cotton as given in the report in certain agricultural farms, etc., with those in the forecasts of cotton crop.

Place	Variety	Year	Yield per acre	Yield per acre as calculated from the forecasts
			lbs.	lbs.
Cawnpore Agricultural Station (United Provinces)	American—			
	Ca 1	1915-16	219	
	Ca 5	"	207	
	Ca 10	"	177	
	Ca 11	"	180	
	Ca 18	"	192	
	Ca 23	"	182	Cawnpore . 98
	Ca 28	"	165	United Pro- 126
	Buri	"	55	vinces (Provin- cial average).
	Desi—			
Hansi farm (Hissar) (Punjab)	J 3	"	218	
	J 13	"	200	
	Roseum 87	"	176	
	Mallisoni 24	"	201	
	4-F American	"	108	Hissar . . 91
	Indicum 135 A	"	129	Punjab . . 86
	Local Bhatia (mixed)	"	143	(Provincial average).
	Sanguineum 20 A	"	115	
	Selection I-A	1914-15	308	
	Deshi	"	282	
Surat farm (Bombay)	Buri—			
	Irrigated	"	145	
	Unirrigated	"	118	
	Cambodia—			
	Irrigated	"	163	Surat . . 92
	Unirrigated	"	118	Broach . . 116
	Lalio—			Bombay . . 91
	Irrigated	"	227	(Provincial average).
	Unirrigated	"	232	
	Ghoghari—			
Agricultural College, Nagpur (Central Provinces)	Irrigated	"	318	
	Unirrigated	"	195	
	Unmanured	1915-16	116	
	Manured	"	105 to 228	
	Allgarh Farm white flowered	"	269	
	Saugor Jari white flowered	"	87	Central Pro- 109
	" " yellow flowered	"	126	vinces and Berar (Provincial average).
Agricultural Stations, North Circle (Central Provinces)				
Hoshangabad (Central Provinces)				

[District figures not available.]

Imperial.]

Mr. G. FINDLAY SHIRRAS.

[Continued.]

ANNEXURE VIII.

Letter No. 1085, dated Nagpur, the 14th March 1918, from D. Clouston, Esq., M.A., B.Sc., Officiating Director of Agriculture, Central Provinces, to the Director of Statistics, Calcutta.

I HAVE the honour to attach herewith a copy of the instructions issued for the guidance of the Agricultural Assistants on whom we depend to collect information for the preparation of the cotton forecast. This system, which was drawn up in 1912, has since been slightly modified. Instead of classifying the crop as good, medium and poor, the assistant selects "average" plots only and carries out his experiments on these. This system has on the whole proved useful, but it cannot be regarded as very reliable for the following reasons:—

- (1) In order to have the figures ready to send to the Commissioner of Settlements by the 1st of December, our Agricultural Assistants have to complete their experiments in the field by the 3rd week of November, but it is impossible at that time to foretell what percentage of the flowers, buds and immature bolls is to drop as the result of any rain there may have been shortly before that time.
- (2) It is impossible, moreover, to foresee what the rainfall after that date is to be. Rain in the end of November or early in December stimulates the vegetative growth of the plant which produces growth of the plant which produces new flowers and continues to give late pickings as the result.

ENCLOSURE.

Memorandum from the Department of Agriculture, Central Provinces and Berar, Nagpur, dated the 15th August 1912.

Will you arrange to send me the first cotton forecast on the 10th November? As was done last year you will select a village in each tahsil in which the cotton crop as a whole is apparently equal to that of the average field in the tahsil. You will inspect all the cotton fields of the village and in your mind's eye classify the crop thereon as good, medium and poor, each representing one-third of the total area under cotton in the village. Measure with the chain a plot of one-tenth acre in each. The tenth of an acre in the 'good crop' should be representative of the one-third of the whole cotton area classed in your mind's eye as being good. Similar precautions should be taken in selecting a medium and poor plot. You will get the assistance of the patwari in laying out these plots.

Count the number of bolls, flowers and buds on ten average plants just before the first picking and find what the outturn per acre should be on the assumption that the weight of the bolls is the same as last year. If from 120,000 bolls, flowers and buds, as counted on a medium plot just before the first picking last year you got an outturn of, say 300 lbs., and only 80,000 this year from a similar medium plot, you would naturally conclude that if the bolls are the same size as those of last year the outturn should this year be $\frac{300 \times 80,000}{120,000}$ or 200 lbs. (*kasas*). But this outturn should next be corrected in the light of the information you have obtained by getting the weight of the bolls. Take the weight in tolas as was done last year. If 100 bolls weighed nine tolas last year and ten tolas this season, $\frac{200 \times 10}{9}$ or 222 $\frac{1}{3}$ lbs. would be the corrected weight.

There are other corrections to be made as we gain experience. We want information as to the number of buds, flowers and immature bolls which drop and the extent to which this is due to climatic conditions. We want, too, to ascertain how many buds form and mature into bolls after the 10th November: this information can be obtained if we count the number of bolls, flowers and buds just before each picking.

Part II.

MEMORANDUM ON THE PREPARATION AND IMPROVEMENT OF COTTON PRESS RETURNS.

5871. *Preamble*.—The object of this memorandum is to bring out certain facts relating to the preparation and publication of the statistics of the half-monthly cotton press returns instituted in 1914, and to offer suggestions for the improvement of these returns.

5872. *Usefulness of the cotton press returns*.—The statistics presented in these returns relate to the quantity of cotton handled by presses and mills, and are, therefore, very useful not only as a means to check the estimates of outturn given in the cotton forecast, but also to assist the cotton trade with up-to-date information regarding the amount of cotton available from time to time in the market. Unfortunately, the returns are not as one would like them to be. An examination has been made in this Department of these returns for the complete season 1916-17 (September 1916 to August 1917), and the results are stated below.

5873. *Incompleteness of the returns as at present submitted*.—In Annexures I and II will be found the amount of cotton pressed in the pressing factories and of unpressed cotton received in the spinning mills in each British Province and Native State during the year 1916-17 (year ending August). It will be seen that the total quantity thus handled fell short of the estimated outturn of cotton crop of the season 1916-17, in the British Provinces (including Native States within provincial boundaries), by 789,000 bales and, in the Native States (outside provincial boundaries, namely, Hyderabad, Central India, Rajputana and Mysore), by 851,000 bales of 400 lbs each. That is to say, even on the assumption that the forecast was correct, which

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Mr. G. FINDLAY SHIRRAS.

[Continued.]

it is really not, the cotton press returns were at least incomplete to the extent stated above. This is shown from the following summary table :—

PROVINCES	Revised estimate of cotton crop in 1916-17	Quantity of cotton pressed in pressing factories and of unpressed cotton received in spinning mills up to 31st August 1917	Increase + or Decrease — in column 3 over column 2
1	2	3	4
	Bales of 400 lbs.	Bales of 400 lbs.	Bales of 400 lbs.
Bombay (including Native States and Baroda)	1,646,000	925,297	— 710,703
Central Provinces and Berar (including Native States)	691,000	715,123	+ 24,123
Madras	347,000	383,930	+ 36,930
Punjab (including Native States)	341,000	182,665	— 158,335
North-West Frontier Province			
Delhi			
United Provinces			
Sind	8,000	55,050	— 22,950
Burma	40,000	40,048	+ 48
Bengal	47,000	104,999	+ 57,999
Bihar and Orissa			
Assam			
Ajmer-Merwara	48,000	75,957	+ 27,957
TOTAL	3,547,000	2,757,876	— 789,124
Native States—			
Hyderabad	500,000	7,721	— 492,279
Central India	311,000	35,112	— 275,888
Rajputana	128,000	46,686	— 81,314
Mysore	16,000	14,102	— 1,898
TOTAL	955,000	103,621	— 851,379

(2) It is not practicable accurately to judge the incompleteness of the returns, province by province since presses and mills in one province bring cotton from another province according to their convenience and requirements. This is especially the case in provinces like Bengal, Ajmer-Merwara, and Delhi, where the production of cotton is not sufficient to meet the requirements of the local presses and mills. Still, it would appear from the figures that, amongst British Provinces, the returns are most incomplete in Bombay and Sind, Punjab, and the United Provinces.

(3) A question arose sometime ago as to whether the wide margin of difference between the estimate of outturn, as given in the cotton forecast, and the quantity handled by presses and mills, as given in the cotton press returns, may not be partly due to overestimation of the outturn in the cotton forecast. My personal opinion all along is that the cotton forecasts, as all forecasts generally, are underestimated. It would also appear from the statistics of exports and consumption given below that the forecast estimate of the season 1916-17 was underestimated by about 135,000 bales, although stocks brought forward from the previous crop and stocks carried over to the next season have been left out of consideration owing to want of data.

	Bales of 400 lbs.
Net exports of cotton by sea from September 1916 to August 1917	2,092,000
Consumption of cotton in mills in India during the same period	1,795,000
Extra mill consumption (conventional estimate made by the Bombay Cotton Trade Association)	750,000
TOTAL	4,637,000
Forecast estimate for the season 1916-17 (as published in the Final General Memorandum on the cotton crop of 1917-18)	4,502,000
DEFICIT	135,000

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Mr. G. FINDLAY SHIRRAS.

[Continued.]

In this connexion, Mr. Keatinge's opinion may be quoted : He says " I have no reason to suppose that the forecast was overestimated. Such is seldom the case." The Director of Land Records and Agriculture, United Provinces, however, said in his letter No. 1598, dated the 20th June, 1917, that the cotton forecast of his province for the season 1916-17 was overestimated by about 47,000 bales. But this is perhaps an exceptional case, and the quantity is very small; and this would increase the difference between the trade estimate and the forecast estimate to over 180,000 bales in place of 135,000 bales shown above. It would thus strengthen the contention that the forecast estimate for all-India was underestimated. The cotton press and mill returns are, therefore, still more incomplete than they appear from Annexures I and II.

5874. *Suggestions for improvement of returns (I) Native States.*—It being proved that the cotton press and mill returns so far received are incomplete, it may now be considered what steps can be taken to improve these returns. First, with regard to Native States. The collection of returns from the presses and mills in the States of Hyderabad, Central India, Rajputana, and Mysore, was undertaken by the Bombay Chamber of Commerce. With the exception of perhaps Mysore, the returns relating to other States are incomplete, as will be seen from Annexure II, and no satisfactory settlement could be made on this point with the Bombay Chamber of Commerce. The Cotton Trade Association, Bombay, was then approached for their views as to whether in their opinion the incompleteness of returns from Native States was unimportant and whether the present system should continue. In reply the Secretary of the Association said " the whole return as issued at present is so incomplete as to be absolutely valueless and even misleading the return might well be discontinued unless some arrangement can be made to obtain complete and reliable figures both from British Provinces and Native States."

(2) A proposal to get returns of presses and mills in Native States through the State authorities instead of through the Bombay Chamber of Commerce was placed before the Chiefs' Conference held in the month of November, 1917. The proposal was considered by a Select Committee, and they were of opinion that the Darbars should be invited to supply the returns, but for the present a quarterly return should suffice.

5875. (ii) *British Provinces.*—Next with regard to British Provinces. An enquiry was made of the provincial Directors of Land Records or Agriculture in the important cotton-growing provinces in British India as to their opinion on the views of the Bombay Cotton Trade Association and as to what check, if any, is made in the local offices for obtaining returns from each of the presses and mills that are actually working. The replies received show, that, as regards completeness of press and mill returns, they are not on the whole satisfactory except in the Central Provinces and Berar and also in Madras. Mr. Boyd, Director of Land Records, Punjab, said " I agree that the present system is not satisfactory but unless presses are compelled by law to send in returns, I see little prospect of improvement The Factories Act is of little use, because most of the presses are exempt from its provisions." Mr. Keatinge, Director of Agriculture, Bombay, pointed out " our letters and reminders often remain unanswered," and again, " many of the mills and presses did not submit returns of the cotton pressed or used by them. I have no hold whatever over the mills and presses anywhere, least of all in Native States from which the returns are the most defective Under the circumstances, I can only agree that the returns are useless and had better be discontinued, unless it is proposed to legislate to enforce the submission of such returns and to employ a staff to see that they are sent both in British India and in Native States." Mr. Hailey, Director of Land Records and Agriculture, United Provinces, said " a certain number (of mills) have refused to send us any returns at all and the figures are quite useless. There has been considerable correspondence on the subject but, as the managers' objections have not been overcome, the returns remain entirely incomplete. I should, of course, prefer the submission of the returns (of presses) to be made obligatory Some of the figures appear difficult to reconcile with the period the press was known to be working." In his evidence before the Cotton Committee on November 1, 1917, Mr. Hailey while alluding to the fact that a reasonable amount of accuracy has been secured in the estimation of cotton forecasts, said " it would, however, greatly assist matters if baling presses were compelled by legislation to submit their returns."

(2) In August last while on tour, I discussed this question with the local authorities at Lyallpur, the most important cotton district in the Punjab; and they were of opinion that in order to get complete press returns, presses should be licensed and that every press owner should be compelled by law to furnish a return showing the quantity of cotton pressed in every fortnight. I also discussed the question at a meeting specially arranged with the Directors of the Cotton Trade Association, Bombay. The Directors suggested that a system of licensing all ginning and pressing factories should be instituted in British Provinces and that the system might, at a later date, be introduced with beneficial results in Native States. It may be noted, in this connexion that an Act authorising the Director of Census, United States of America, to collect and publish statistics of cotton was passed on July 12th, 1912. Under this Act, owners or agents of all cotton ginneries, manufacturing establishments, etc., are compelled on pain of heavy fines to furnish reliable statistics of the cotton ginned and consumed. A copy of the above Act will be found in Annexure III. The Directors of the Cotton Trade Association also suggested that the Department of Statistics should employ a staff of travelling auditors to collect figures from presses, mills, railways, etc. The figures thus collected might be published quarterly, and would thus afford a valuable check on the fortnightly returns, which latter would be extremely useful, if reliable, but which could be dispensed with in favour of, say, quarterly returns, if the difficulties in connexion with the collection of accurate figures fortnightly could not be overcome.

5876. *Forms of the returns.*—The present forms of cotton press and mill returns (Annexure IV, Tables I and II) show a column stating the total number of presses or mills in the provinces and States and another column stating the number of presses or mills for which returns have been received in the half-month. It has been pointed out by the Director of Agriculture and Industries, Central Provinces, that these two columns are misleading without a third column showing the total number of mills or presses which did not work during the half-month, as they often give a wrong impression of incompleteness of returns, since all the presses and mills do not work every half-month, especially where " pools " or " combines " prevail. The Director of Land Records and Agriculture, United Provinces, is also of the same opinion. It would, therefore, be well if another column were inserted in each of the Tables I and II in Annexure IV showing the number of presses or mills which were closed or working in the half-month of report.

(2) In February, 1916, provincial authorities preparing cotton press returns in each province were asked for their opinion as to whether weekly returns, as prevailing in Madras, should be substituted for fortnightly returns for the sake of uniformity in all the provinces. All the provinces with the exception of the Punjab and Delhi objected to the proposal. The United Provinces and Bombay Directors even suggested that monthly returns would be more convenient. It is, therefore, for consideration whether monthly returns should be substituted for the existing half-monthly returns, so as to relieve the local authorities of the difficulty

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of getting half-monthly returns in due time. It might be mentioned, in this connexion, that ginning returns are published periodically in the United States of America between September and March, a copy of which will be found in Annexure V.

(3) The periodical ginning returns in the United States of America are published in postcard form. In January, 1916, the Secretary of the International Federation of Master Cotton Spinners' and Manufacturers' Association brought to notice that cotton press returns in the United States of America were published in postcard form in order to save some time and postage. The Tables I, II and III of the Cotton Press Returns published by this Department cannot be printed on a postcard. Moreover, the forms in which the returns are at present issued are found useful both by the trade and by the provincial authorities for checking the completeness of press and mill returns and also the estimates of outturn of cotton forecasts, and therefore cannot, at present, be done away with. A monthly statement similar to the periodical ginning returns of the United States of America, or a quarterly abstract table showing totals (as in Table III) might be printed on postcards and issued separately, in addition to the present detailed returns, whether they be issued half-monthly or monthly in future.

5877. *Survey of purposes.*—Briefly, the proposals are:—

- The introduction of a system of licensing the cotton presses in British India on the lines of the Act in the United States of America, referred to in paragraph above so as to compel the press owners by law to submit returns, and if this system succeeds, Native States authorities might be invited, later on, to introduce it in their States. The Local Governments or their officers responsible for the collecting of the returns from presses should be authorised to issue licenses in consultation with representatives of the trade. I do not think, on the whole, an official or semi-official body in Bombay should be entrusted with the licensing of gins and presses throughout India.
- The Bombay Chamber of Commerce should be certainly relieved of the duty of collecting returns from presses and mills in Native States, and the returns should be procured by the respective States authorities, as decided at the Chiefs' Conference.
- Addition of a column in the present form of cotton press returns showing the number of ^{presses} _{mills} closed or working during the half-month.
- Substitution of monthly returns in place of the existing half-monthly returns, if necessary. (The quarterly returns proposed to be furnished by Native States—vide paragraph above—might be appended to the returns for British Provinces at intervals of three months.)
- Publication of a monthly or quarterly abstract table on postcards on the United States model.

ANNEXURE I.

Total quantity of cotton pressed in the Pressing Factories and of unpressed cotton received in the Spinning Mills, from 1st September, 1916, to 31st August, 1917, in British Provinces (including Native States within provincial boundaries) and Native States.

BRITISH PROVINCES.

PROVINCES	Total estimated out-turn of cotton crop in the year 1916-17. (Bales of 400 lbs. each)	Quantity of cotton pressed up to 31st August, 1917. (Bales of 400 lbs. each)	Quantity of unpressed cotton received in spinning mills up to 31st August 1917. (Bales of 400 lbs. each)	Total of columns 3 and 4 (Bales of 400 lbs. each)	Percentage ratio of column 5 to column 2
1	2	3	4	5	6
Bombay (including Native States) and Baroda.	1,646,000	630,090	305,207	935,297	56.8
Central Provinces and Berar (including Native States).	691,000	669,885	45,238	715,123	103.5
Madras	347,000	366,835	17,095	383,930	110.6
Punjab (including Native States) } North-West Frontier Province, Delhi . . }	341,000	166,027	16,638	182,665	53.6
United Provinces	309,000	245,136	19,671	264,807	85.7
Sind	78,000	55,050	..	55,050	70.6
Burma	40,000	40,048	..	40,048	100.1
Bengal } Bihar and Orissa } Assam }	47,000	11,630	93,369	104,999	223.4
Ajmer-Merwara	48,000	33,083	42,874	75,957	158.2
TOTAL	3,547,000	2,217,784	540,092	2,757,876	77.8

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[Continued.]

Total quantity of cotton pressed in the Pressing Factories and of unpressed cotton received in the Spinning Mills, from 1st September, 1916, to 31st August, 1917, in British Provinces (including Native States within provincial boundaries) and Native States—contd.

NATIVE STATES.

PROVINCES.	Total estimated out-turn of cotton crop in the year 1916-17. (Bales of 400 lbs. each)	Quantity of cotton pressed up to 31st August, 1917. (Bales of 400 lbs. each)	Quantity of unpressed cotton received in spinning mills up to 31st August 1917. (Bales of 400 lbs. each)	Total of columns 3 and 4 (Bales of 400 lbs. each)	Percentage ratio of column 5 to column 2
1	2	3	4	5	6
Hyderabad	500,000	3,511	4,180	7,721	1.5
Central India	311,000	..	35,112	35,112	11.3
Rajputana	128,000	46,686	..	46,686	36.5
Mysore	16,000	12,490	1,612	14,102	88.1
TOTAL	955,000	62,717	40,904	103,621	10.9

NOTE.—Revised since the issue of the return for the half-month ending 31st August, 1917. The outturn figures are those given in the Final General Memorandum of the Cotton Crop of 1917-18 issued on February, 18, 1918.

ANNEXURE II.

Public Laws of the United States of America—62nd Congress, 1911-13

Chapter 219.—An Act Authorizing the Director of the Census to collect and publish statistics of cotton.

July 22, 1911
(H. R. 19403)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Director of the Census be, and is hereby, authorised and directed to collect and publish statistics concerning the amount of cotton ginned; the quantity of raw cotton consumed in manufacturing establishments of every character; the quantity of baled cotton on hand; the number of active consuming cotton spindles; and the quantity of cotton imported and exported, with the country of origin and destination.

Section 2.—That the statistics of the quantity of cotton ginned shall show the quantity ginned from each crop prior to September first, September twenty-fifth, October eighteenth, November first, November fourteenth, December first, December thirteenth, January first, January sixteenth, and March first, and shall be published as soon as possible after these respective dates. The quantity of cotton consumed in manufacturing establishments, the quantity of baled cotton on hand, the number of active consuming cotton spindles, and the statistics of cotton imported and exported shall relate to each calendar month, and shall be published as soon as possible after the close of the month. Each report published by the Bureau of the Census of the quantity of cotton ginned shall carry with it the latest available statistics concerning the quantity of cotton consumed, stocks of baled cotton on hand, the number of cotton-consuming spindles, and the quantity of cotton imported and exported. All of these publications containing statistics of cotton shall be mailed by the Director of the Census to all cotton ginners, cotton manufacturers, and cotton warehouse men, and to all daily newspapers throughout the United States. The Director of the Census shall furnish to the Bureau of Statistics of the Department of Agriculture, immediately prior to the publication of each report of that Bureau regarding the cotton crop, the latest available statistics hereinbefore mentioned, and the said Bureau of Statistics shall publish the same in connexion with each of its reports concerning cotton.

Section 3.—That the information furnished by any individual establishment under the provisions of this Act shall be considered as strictly confidential and shall be used only for the statistical purpose for which it is supplied. Any employee of the Bureau of the Census, who, without the written authority of the Director of the Census, shall publish or communicate any information given into his possession by reason of his employment under the provisions of this Act shall be guilty of a misdemeanor and shall, upon conviction thereof, be fined not less than three hundred dollars or more than one thousand dollars or imprisoned for a period of not exceeding one year, or both so fined and imprisoned, at the discretion of the Court.

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[Continued.]

Information to be furnished by ginneries, etc.

Punishment for willful refusal, etc.

Compilation of information from foreign countries. Abstract to be published with reports. Former laws repealed. Vol. 32, p. 53; Vol. 33, p. 1282; Vol. 35, p. 1168.

Section 4.—That it shall be the duty of every owner, president, treasurer, secretary, director or other officer or agent of any cotton ginnery, manufacturing establishment, warehouse, or other place where cotton is ginned, manufactured, or stored, whether conducted as a corporation, firm, limited partnership, or by individuals, when requested by the Director of the Census or by any special agent or other employee of the Bureau of the Census acting under the instructions of said Director, to furnish completely and correctly, to the best of his knowledge, all of the information concerning the quantity of cotton ginned, consumed or on hand, and the number of cotton consuming spindles. The request of the Director of the Census for information concerning the quantity of cotton ginned or consumed, stocks of cotton on hand, and number of spindles may be made in writing or by a visiting representative, and if made in writing shall be forwarded by registered mail, and the registry receipt of the Post Office Department shall be accepted as evidence of such demand. Any owner, president, treasurer, secretary, director or other officer or agent of any cotton ginnery, manufacturing establishment, warehouse, or other place where cotton is ginned or stored, who, under the conditions hereinbefore stated, shall refuse or willfully neglect to furnish any of the information herein provided for or shall willfully give answers that are false shall be guilty of a misdemeanor and, upon conviction thereof, shall be fined not less than three hundred dollars or more than one thousand dollars or imprisoned for a period of not exceeding one year, or both so fined and imprisoned at the discretion of the court.

Section 5.—That in addition to the information regarding cotton in the United States hereinbefore provided for, the Director of the Census shall compile by correspondence or the use of published reports and documents, any available information concerning the production, consumption, and stocks of cotton in foreign countries, and the number of cotton consuming spindles in such countries. Each report published by the Bureau of the Census regarding cotton shall contain an abstract of the latest available information obtained under the provision of this section, and the Director of the Census shall furnish the same to the Department of Agriculture for publication in connexion with the reports of that Department concerning cotton in the same manner as in the case of statistics relating to the United States.

Section 6.—That the joint resolution authorising the Director of the Census to collect and publish additional statistics, approved February ninth, nineteen hundred and five, and the joint resolution approved March second, nineteen hundred and nine, and all other laws and parts of laws inconsistent with the provisions of this Act are hereby repealed.

Approved July 22, 1912.

ANNEXURE IV.

FORM OF COTTON PRESS RETURN.

I.—Cotton Press Return for India in the half-month ending—(Season from 1st September to 31st August)

Province or State	Total estimated cotton crop (bales of 400 lbs each)	Percentage to total for India	Total number of presses in the Province or State	Number of presses for which returns have been received for the half-month	Quantity of cotton pressed in the half-month (bales of 400 lbs each)	TOTAL QUANTITY PRESSED FROM 1ST SEPTEMBER TO (BALES OF 400 LBS EACH)	
						Current year	Previous year
1	2	3	4	5	6	7	8
Bombay (including Native States) and Baroda							
Central Provinces and Berar (including Native States)							
Madras							
Punjab (including Native States)							
United Provinces							
Sind							
Burma							
Bihar and Orissa							
Bengal							
Assam							
North-West Frontier Province							
Ajmer-Merwara							
Delhi							
TOTAL BRITISH PROVINCES							
Hyderabad							
Central India							
Rajputana							
Mysore							
TOTAL NATIVE STATES							
GRAND TOTAL							

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[Continued.]

II.—Return of Cotton received in the Mills in India in the half-month ending—(Season from 1st September to 31st August)

Province or State	Total number of mills in the Province or State	Number of mills for which returns have been received for the half-month	Quantity of cotton received in the half-month (bales of 400 lbs each)	TOTAL QUANTITY RECEIVED FROM 1ST SEPTEMBER TO (BALES OF 400 LBS EACH)	
				Current year	Previous year
1	2	3	4	5	6
Bombay (including Native States) and Baroda					
Central Provinces and Berar (including Native States)					
Madras					
Punjab					
United Provinces					
Sind					
Bengal					
Ajmer-Merwara					
Delhi					
TOTAL BRITISH PROVINCES					
Hyderabad					
Central India					
Rajputana					
Mysore					
TOTAL NATIVE STATES					
GRAND TOTAL					

Note.—This statement shows the quantity of *unpressed* cotton received in the mills, the quantity of pressed cotton coming through the presses not being taken into account, as this is included in statement I.

III.—Total quantity of cotton pressed in the Pressing Factories and of unpressed cotton received in the Spinning Mills, in British Provinces (including Native States within provincial boundaries)

Province	Total estimated cotton crop (bales of 400 lbs each)	Quantity of cotton pressed up to (bales of 400 lbs each)	Quantity of unpressed cotton received in spinning mills up to (bales of 400 lbs each)	Total of columns 3 and 4 (bales of 400 lbs each)	Percentage ratio of column 5 to column 2
1	2	3	4	5	6
Bombay (including Native States) and Baroda					
Central Provinces and Berar (including Native States)					
Madras					
Punjab (including Native States)					
North-West Frontier Province					
Delhi					
United Provinces					
Sind					
Burma					
Bengal					
Bihar and Orissa					
Assam					
Ajmer-Merwara					
TOTAL					

Note.—This table contains the totals of tables I and II, excluding Hyderabad, Central India, Rajputana, and Mysore.

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[Continued.]

ANNEXURE V.

Copy of a Ginning Return Published in the United States.

PRELIMINARY REPORT.

DEPARTMENT OF COMMERCE

BUREAU OF THE CENSUS.

SAM. L. ROGERS, DIRECTOR.

Washington, 10 a.m., January 9, 1918.

REPORT ON COTTON GINNING.

Number of bales of cotton ginned from the growth of 1917 prior to January 1, 1918, and comparative statistics to the corresponding date in 1917 and 1916; crops of 1916 and 1915; and the per cent of the crop of each year ginned prior to January 1.

STATE	RUNNING BALES (Counting round as half bales and excluding linters)					PER CENT OF CROP GINNED PRIOR TO JANUARY 1	
	GINNED PRIOR TO JANUARY 1			CROP		1917	1916
	1918	1917	1916	1916	1915		
United States	10,450,401	11,039,491	10,636,778	11,363,915	11,068,173	97.1	96.1
Alabama	483,016	540,661	1,007,130	552,679	1,025,818	97.8	98.2
Arizona	13,748	5,776	1,445	7,125	1,925	81.1	75.1
Arkansas	858,445	1,060,569	753,180	1,102,671	789,583	96.2	95.4
California	37,265	28,237	20,383	43,664	28,586	64.7	71.3
Florida	46,353	50,254	54,687	50,979	55,351	98.6	98.8
Georgia	1,768,280	1,810,934	1,906,771	1,852,104	1,937,730	97.8	98.4
Louisiana	605,937	435,437	332,428	441,121	336,813	98.7	98.7
Mississippi	869,712	775,452	888,813	800,190	925,509	96.9	96.0
Missouri	44,739	55,727	43,465	60,466	46,044	92.2	93.2
North Carolina	543,523	642,816	695,978	693,672	737,354	92.7	94.4
Oklahoma	884,820	798,761	561,950	813,419	622,176	98.2	90.3
South Carolina	1,146,226	922,152	1,133,596	970,702	1,174,213	95.0	96.5
Tennessee	200,320	357,029	281,879	378,064	296,222	94.4	95.2
Texas	2,987,947	3,523,905	2,935,697	3,562,789	3,068,852	98.9	95.7
Virginia	16,273	26,192	15,079	27,975	16,357	93.6	92.2
All other states	3,788	5,589	4,297	6,295	5,937	88.8	85.3

The statistics in this report include 184,510 round bales for 1918; 188,052 for 1917; and 105,785 for 1916. The number of sea-island bales included is 86,813 for 1918; 113,343 for 1917, and 88,933 for 1916. The distribution of sea-island for 1918, by States, is: Florida, 36,119; Georgia, 44,748; and South Carolina, 5,946.

The statistics for this report for 1918 are subject to slight corrections when checked against the individual returns of the ginner being transmitted by mail. The corrected statistics of the quantity of cotton ginned this season prior to December 13, are 10,134,704 bales.

CONSUMPTION, STOCKS, IMPORTS, AND EXPORTS—UNITED STATES.

Cotton consumed during the month of November, 1917, amounted to 590,763 bales. Cotton on hand in consuming establishments on November 30 was 1,408,327 bales, and in public storage and at compresses 3,745,485 bales. The number of active consuming cotton spindles for the month was 33,604,659. The total imports for the month of November, 1917, were 7,038 bales, and the exports of domestic cotton, including linters, were 418,685 bales.

WORLD STATISTICS.

The world's production of commercial cotton, exclusive of linters, grown in 1916, as compiled from published reports, documents, and correspondence, was approximately 18,365,000 bales of 500 pounds net while the consumption of cotton (exclusive of linters in the United States) for the year ending July 31, 1917, was approximately 20,180,000 bales of 500 pounds net. The total number of producing cotton spindles, both active and idle, is about 150,000,000.

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[Continued.]

Mr. G. FINDLAY SHIRRAS called and examined.

5878. (President.) With the permission of the Committee I wish to confine my remarks entirely to the statistical side of work, the preparation and improvement of cotton forecasts, the improvement of cotton press returns, and the publication of the prices of cotton at up-country markets. I have no direct control over the local compiling officers. The returns received from the provinces have been considerably changed by me during the last four years. When the Department was created in 1914, I went to Bombay to consult the Bombay Cotton Trade Association as to the method which we should follow in publishing information as to cotton, the general idea being to specialise as far as possible in regard to the information which the trade requires. The trade pointed out very strongly that the forecasts were, in some years, 20 to 25 per cent. wrong, whereas, in the case of American forecasts, the difference between the estimate and the actual figure was about one to two, sometimes three per cent. So what I have done recently is, when the returns come into the office, to have the outturn figures compared with those for the previous year and with the outturns for the same areas over a long period of years, and also with the figures for the neighbouring areas, in order to ascertain whether these are *prima facie* absurd or not. I think it would be better if we had a Crop Reporting Board as in America. Last year, the forecast from Sind showed the outturn as 48,000 bales and the Director merely remarked that he thought it was more. He did not raise the figures. He said that the district estimates appeared to be somewhat low and that he thought the crop was considerably larger than what the district outturns indicated. What I did was to study the weekly reports of rainfall statistics and the outturn for good, bad, and indifferent years for over twenty years. I came to the conclusion that, all things considered, the estimated outturn per acre was absurd and so I raised it to a figure which gave a result of nearly 67,000 bales for the whole area. A few days ago, a large firm wrote to say that their Punjab and Sind figures were almost identical with ours. Another case is Hyderabad from which I got a final return of nearly eight lakhs of bales from the districts. When sending up his estimates, the Director said that he did not think that it would be more than four lakhs—I am speaking from memory—just about half. I looked into the previous year's figures and into the crop report and I raised it to 4½ lakhs. If we had people like Mr. Stuart, the Director of Agriculture, Madras, who would take an interest in the actual return, the compilation of cotton forecasts would not be difficult; but when we get Directors of Agriculture who look to the statistical side of the work as merely secondary and regard the information required by the trade as subsidiary, what can I do?

5879. My general idea is that I should have more expert assistance, following the practice in the United States. There is need for greater concatenation. This I have dealt with at some length in my Memorandum on the Cotton Forecast which I have put in. I consider there should be a Central Crop Reporting Board. I should like to have on it a cotton specialist, and one or two of the Directors of Agriculture of the major provinces, who would go over the returns before I published them. I could either publish them at Bombay or Delhi. I suggested informally to Mr. Mant, the Secretary of the Revenue and Agricultural Department, Government of India, that he might be the *ex-officio* President of the Crop Reporting Board. The difficulty about this was that my headquarters are in Calcutta while Mr. Mant's are at Delhi during the crop forecasting season. I have described in my written evidence the American system of crop reporting. The American crop reporting service consists of trained men. We are utilising the provincial Agricultural Departments, e.g., for our intermediate telegraphic reports on the condition of the wheat crop, and their estimates are very useful. I found at Lyallpur that the Principal of the Agricultural College could give the outturn of a field merely by looking at it. You cannot expect a revenue agency to do that. If I got an absolutely correct figure for the previous year's total outturn, then it is not hard to arrive at a fair estimate of the present year's outturn but expert advice would be very useful in checking the figures, reported by the revenue agency. What we ought then to have is a Crop Reporting Board on which experts would sit. The district figures could be sent through the Directors of Agriculture who would send them on with their remarks or we could get the sub-district returns separately. In Madras, the Board of Revenue does not allow the district officers to touch the figures at all, since the personal element enters into the question very largely. As the cotton crop is so important, I am quite prepared to have special attention given to the crop reports for cotton as in America, and in Egypt. We cannot expect to have the advanced system of the United States but we might make a beginning. The objection to the United States system is that it would mean an enormous staff. Probably we should have to start very slowly; people will give us information every month regarding the main classes of cotton and how they are getting on—information such as is published by the American Bureau every month. That would mean a considerable staff. If we have experts, they might be useful as Inspectors. They might be people who could carry out any special enquiry or control any special work. The trade everywhere accepts our area figures, but it discards our outturn figures. This year I have discarded the whole of the outturn figures for Central India and Rajputana, but I do not think that one officer ought to take that on himself. I have been in Central India and I know how little reliance can be placed on the figures of outturn.

5880. There is also that snag of the normal crop which militates against the outturn figures being correct. You will find it very rare that any district reports a normal crop. Mr. Low told me that when he was Directors of Agriculture and Industries, he could count on his fingers the number of officers who would report a crop as 110 or above. Either we might do as they do in Madras, i.e., leave the reporting agency as it is, and when they report 75, consider it as meaning 100 and have the figures corrected accordingly in my office or in the office of the Director of Agriculture or in some other Central Office. This system must not be done in any haphazard way but as described in paragraph 5862 of my written evidence. Unless you pick your average figure carefully and have that average verified and corrected year after year, you cannot arrive at accurate calculations.

5881. I do not find that the trade pays considerable attention to the cotton figures in the forecast, but that they pay special attention to the area figures, whereas they have their own reports weekly as to outturn. The trade is keen on the cotton forecast, for example, I have it on my file that, when the Secretary to the Department of Commerce and Industry went to Bombay, they complained to him that they had been led astray by a forecast which was twenty per cent. wrong. I was present at a meeting in Karachi at which it was stated that more cotton had been exported by one firm from Karachi than the whole outturn estimated in the Sind cotton forecast. I wrote to Mr. Keatinge about it, pointing out that the forecast was not correct and that though the area figure might be correct, the outturn figure was wrong. He has told me over and over again that he wants a special statistical staff and that he cannot do the work with his present staff which is over-worked. That is, of course, an important point.

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[Continued.]

5882. As regards the dates of the publication of the forecasts, I have dealt with the subject in para. 5868 of my written evidence with special reference to the Madras crop. As to the present difficulty experienced by Madras, I think we can meet them. We could either issue the final forecast a month later than at present or issue a fifth or supplementary report in April.

5883. (Mr. Wadia.) To enable us to give complete figures for Madras, the date of the forecast would have to be a month later than at present, or a fifth or supplementary report in April would have to be undertaken. I must get the returns by the 10th March or April.

5884. In regard to cotton, I pay very great attention to the season and crop reports which are ready by September or October. These give finally adjusted figures of the previous year and I know then what exactly the crop in each British province was. I also write to the local Directors enquiring whether the figures supplied by them are their actual figures. I take the mill consumption, and the extra-factory consumption and the exports, and see how my forecast is cut. For forecasts, I would have a proper reporting agency but I would go slowly. I would take the present revenue agency (*patwaris*, etc.), but I would have more intelligence at the top and more inspection of the returns as they come in. I mean more scrutiny and care by superior officers. It is a sort of half-way house to the American ideal. The special staff in the United States is an ideal which I should very much like to see eventually in India, but I am afraid that the Government of India could not be asked to sanction it now as it would be too expensive.

5885. In my office, there are eighty men, of whom only about half a dozen are in the Agricultural Section. I have got a very good man at the top, as head of the section, besides a Superintendent who supervises the section with certain other sections. In America they have a proper estimating department which has a very big staff. A very large sum is voted by Congress for special experts on cotton, for crop reporting, etc. Their field service consists of trained field agents. If I had an adequate staff, I could turn out as good results as other countries. My Department deals not only with all forecasts but also with the sea-borne trade statistics; it deals with the frontier and inland trade, and also with statistics on prices and wages, and also with financial and commercial, judicial and administrative statistics. There are ten sections. One section deals, as already explained, with the agricultural statistics of British India and also with those of Native States, in addition to the crop forecasts and the cotton press returns. The staff of this section is about half a dozen men, two of whom are very well educated and able men. The question of the staff would depend upon whether you are going to make the central statistical office of India responsible for the forecast, that is to say, whether over 200 cotton growing district reports from the British provinces would be sent direct to my office, a copy only going to the local Director of Agriculture who would give his estimate as well. Native States (the reports from which sometimes come to me direct) are to give more complete returns than formerly, as was agreed upon at the Conference of Ruling Chiefs in Delhi in November, 1917. If we are going to have all the work of the cotton forecasts done by the Cotton Crop Reporting Board, which will issue the forecast from Bombay or say, Delhi or Calcutta, and relieve Local Governments of a certain amount of the work, I should then require a larger staff than if I merely continued to work on checking and publishing the figures received from Local Governments. My personal opinion is that I should like a Crop Reporting Board of which the Secretary to the Government of India in the Revenue and Agricultural Department, or the Director of Statistics with the Government of India, might be President, and the other members might be a cotton specialist and one or two Directors of Agriculture. After obtaining the returns from the provinces and from some of the big firms, the Board would issue the forecast on a specified date and at a specified time.

5886. It is absolutely necessary to improve the present system, but I am afraid we could not have *en bloc* the huge American staff of reporters. We should start on the lines I have suggested, but at the same time, Local Governments should also deal with the subject as at present. I should like to have their primary reporting agency (*i.e.*, sub-district) reports, as well as the Directors' reports, all sent direct to the Central Statistical Office. If that were done, the big firms would supply their figures confidentially as well, provided their figures were put into a safe and not utilised until the day the forecast was published, as is the case in America. I am quite prepared to make a special experiment of this nature for cotton, and perhaps for wheat, but I would like to start with cotton. As to what would happen if we had a Crop Reporting Board in such a case as that which occurred at the end of October last year, when heavy rains came and the position of cotton which had up till then been very good was completely changed, the Crop Reporting Board would certainly have been able to keep the trade informed of the change effected. I should not be opposed to monthly cotton reports as in America. It would be published at once and made available to the trade quickly. If I had people in the provinces going about and reporting to me in cipher, I could then tell the trade within 24 hours the latest information regarding cotton. If the trade likes, we could issue a fortnightly statement. If the reports came direct to the Board instead of through Local Governments, I could issue a monthly report. I am already issuing monthly reports for wheat so long as the war lasts.

5887. For acreage, I depend entirely on the provincial revenue agency. If I get any thing above ten per cent. difference, I make always enquiries from the Directors of Agriculture. Mr. Stuart in Madras started a very good system by which he found whether all the Revenue Inspectors and *karnams* (village accountants) in the *taluk* were reporting or not. The danger is that the primary reporting agency may not give the complete figures. That is the thing about which one has to be careful. The reporting system could certainly be improved if we had people going about and noting and reporting condition of the crops. I don't want the Agricultural Department to do it entirely at the cost of their other important work. I should, however, like to see a system of reports from selected officers. Their chief work is the development of agriculture and not statistics. When I want help direct from the Agricultural Department I can always get it by writing semi-officially. There is, however, no real system in vogue by which we utilise that Department in the way we should. As regards the area, it rests on the land revenue system. I am quite content with the acreage figures and do not suggest any improvement in regard to them. I would leave the acreage figures as they are. In the case of mixed crops, the present system is to divide up the area in the proportion in which the constituent crops of the mixture are sown or in the proportion of the number of rows of each crop. In the United Provinces, however, they calculate the acreage from the estimates of the outturn in regard to oil-seeds but not, I am glad to say, for cotton. The question of mixed crops is an extraordinarily difficult one, and I would not lay down any hard and fast rule now. I have tried very hard to devise a general system for the whole of India and have not been able to do so up to the present.

5888. In regard to unofficial cases, my agricultural section is a sort of a branch of the Revenue and Agricultural Department. I send the papers with my suggestions to the Revenue and Agricultural Department from which they sometimes go to the Agricultural Adviser, who notes on them. If the

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[Continued.]

Revenue and Agricultural Department agrees, instructions are issued to Local Governments accordingly.

5889. As to the anna valuation, I discussed it with Sir Reginald Craddock, when I was in Burma. He said that he could never get a sixteen anna crop reported. The great drawback in our present system is that no one will ever give you a proper forecast of outturn in terms of the normal. They will never report a full crop. A crop is almost always under-estimated. In America, they take 100 as what they call a full crop. In America, there is no hesitation in reporting 75 or 80 per cent. crop, because they know 100 is the full super-normal crop, as it is not in India, and if any mistake were made the Crop Reporting Board would notice this at once. Local Governments have been consulted and the general consensus of opinion is that under-estimating is general throughout India. That being so we shall either have to make the full crop 100 or to raise the *karnam's* figures by taking ten years average as proposed by Mr. Stuart. If Mr. Stuart's proposal is accepted, you need not disturb the local reporting agency, but it is a question which requires very careful consideration, before any decision is arrived at.

5890. It might save a lot of trouble if returns of *kapas* were sent in and converted to lint figures in my office, since *tahsildars*, etc., do not know much about ginning percentages and therefore about the outturn of lint. If we did this, it would prevent a lot of wrong conversions taking place before the cotton return left the district. I had a case of this kind recently. I got a return of ginned (cleaned) cotton from Ajmer-Merwara of about 400 lbs. per acre. I pointed out the mistake to the Commissioner of Ajmer-Merwara and the figure was corrected to 300 lbs. per acre. When any return of outturn has to be submitted to my office, or to the Director of Land Records and Agriculture, or to the Local Government, it should be submitted in *kapas*. All estimate should be sent in *kapas* and not in lint.

5891. The areas under each class of cotton in each province are now given separately and we should be able to arrive at the lint figures from the outturn of *kapas* and the ginning percentage. I have always kept *Sind* separate, as its cotton is different. As time goes on, we shall improve that.

5892. With regard to the co-operation of Native States, I have already said that, at the last Conference of Ruling Chiefs, the Chiefs were unanimous on the point, and cordially agreed to give us figures. We have no means of checking the figures, but the question will be considered by the Darbars and ourselves.

5893. (Mr. Hodgkinson.) I don't think the figures from Native States are as reliable, and as pointed out in my written evidence (paragraphs 5866), one-third of the total area under cotton is in Native States. The policy of the Government of India up to last year had been to leave Native States out entirely and not to ask them for returns, but now the States themselves see that it is in their own interest to send in their cotton figures and I hope to see a very great improvement within the next four or five years. As to how the returns from Native States can be made more accurate, that is a matter which is for the consideration of the Ruling Princes. Sending out instructions in the vernacular for the preparation of the forecast would be of very great assistance. I did that in the case of the cattle census and it is working extraordinarily well. I feel sure that it could be done with cotton. Printed forms for filling up might also be sent out. The position seems to be that unless you can get accurate figures from the Native States, it will not be much good. That is the difficulty.

5894. (Mr. Roberts.) There has been a great improvement in accuracy in the forecast during the last few years. That is what I have been told. The Department of Statistics has, since I have been Director, paid great attention to the forecasting of cotton. It entails a lot of going about. I have told Government recently that I ought to tour more and that, unless I get hold of the local people and discuss matters personally with the Directors of Agriculture, it will not be possible for me to carry out the improvements that the Government of India desire. It is really one of the most important parts of the duties of the Director of Statistics to tour regularly and systematically and keep in close touch with the trade, Directors of Agriculture, etc.

5895. As regards crop cutting experiments, we find it much better to get the Agricultural Departments to do the crop cutting experiments. It is not satisfactory to ask busy *tahsildars*, etc., to do them. The Agricultural Department knows how to estimate the outturn for a district which has various kinds of soils. I would make the Agricultural officer responsible for the figure of outturn. In Burma, the results of crop cutting experiments conducted by district officers are not trustworthy and are therefore not used for estimating outturn in crop forecasts, for which purpose the figure ascertained by settlement officers are utilised. The outturns have been very considerably raised this year by the Settlement Commissioner on the basis of the Settlement Reports. I think we ought also to have, as in England, typical plots and to watch the crop there from year to year. It should be carried on from year to year. It is done on some of the farms for instance, at Cawnpore on wheat, and for comparative purposes it is of some interest. I would like to see that information used from year to year as a check on the forecast for the economic circle in which the experimental farms are situated.

5896. In some of the provinces the authorities are extremely loth to consult the agricultural experts. There is no systematic method of consulting them as to the probable outturn of crops. We are most anxious to get this part of the work done by the Agricultural Department and developed, but at the same time not so as to encroach too much on the present work of the Agricultural Department with its pressing duties. The Government of India some time ago issued instructions to Local Governments in regard to this. (Circular No. 1242, dated 29th December, 1917).

5897. I am not in favour of a non-official body, such as a Central Board in Bombay, being left to deal with forecasts. Such a Board, however, would be useful in disseminating cotton statistics which we publish and it would be an invaluable assistance to this Department.

5898. As to how far the railway returns are used in checking the cotton press returns, there is only one province in which this has been done. I did it recently for Madras. I went to Madras at the end of last year and as a result of a conference there, we decided to get all the railways carrying Madras cotton to give us the figures each had for cotton. The matter is now in an experimental stage. I also wrote to the Directors of Agriculture about this scheme, but some of them thought that it was not at present worth while. I think some good results could be obtained, especially in Madras, in Burma, and elsewhere.

5899. (President.) I am in favour of compulsory submission of press returns. The cotton is ginned in about 1,400 gins throughout India, and it then goes mainly to the presses, a part going also direct to the spinning mills. We take the returns from the presses and the mills. There are 750 presses of which 150 are in Native States and 245 mills, of which 22 are in Native States. I am not only in favour of the submission of compulsory returns in British India, but I hope the Native States will also agree to follow suit. I had a meeting with the Bombay Cotton Trade Association last year and they cordially agreed. At the Chiefs

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[Continued.]

Conference, the Chiefs said that they could not give fortnightly returns but they would be prepared to give quarterly returns.

5900. As to the question of licensing ginning and pressing factories, I certainly would not entrust licensing to a semi-official body but I would keep the power with Local Governments working through any officer or officers or association that may be necessary.

5901. (Mr. Wadia.) Natives States send their cotton press returns to the Bombay Chamber of Commerce. I believe, in Gwalior, they do know how much cotton is pressed, but we have never asked for the figures. They keep those figures for reference and they are now quite willing to give them to us. At the Chiefs' Conference, they said they would send the figures direct to the Director of Statistics and the Government of India agreed to this. The proposal for the addition in the return of an extra column to show the number of presses or mills working in the particular fortnight was the result of correspondence with the local authorities.

5902. As to the distribution of such information, the orders of the Government of India are that sending telegraphic information about forecasts, etc., to firms or associations is a matter which ought to be left to private agency. What I do is that I hand over the figures to the Associated Press. When we get a telegram from a firm or body asking us to telegraph them the forecast, we give them the figures by letter. The system in America is quite different and I would like to have the same method as in America for assisting the trade.

5903. It has been suggested that the fortnightly post cards should be printed in the vernacular and sent to each press. I may state that I am quite satisfied with the Central Provinces returns. The Punjab returns are hopeless. The question of sending the returns promptly to all concerned is simply a question of staff. I get returns from pressing factories and also from spinning mills. The object of the mill return was to let us know how much unpressed cotton came into the mills, so that by adding the mill figures to those furnished by the presses, the total amount of cotton produced and handled could be ascertained, in order to check the estimated outturn reported in the cotton forecasts. Mr. Hailey tells me that the mills flatly refused to give him their returns. I understand that, in America, they have only ginning returns probably because all cotton there passes through the ginneries. This is not the case in India, where a larger amount of cotton entering the market is dealt with in the presses than in the ginneries. A considerable quantity of the cotton produced in India is still hand-ginned; a large part of this goes to the presses for baling and the remainder is partly taken by the mills and partly consumed locally outside the mills. The ginning returns in America are sent in post card form. The Local Governments here would not do it. It would be done by the Central Bureau and we might apply that to the forecast as well.

5904. The Native States want to do away with (and I think rightly) the submission of pressing returns to the Bombay Chamber of Commerce. You can get anything out of the Native States if you ask for it in the proper way. We got into touch with the Chiefs at the Ruling Chiefs' Conference: as I said before they are only too willing to assist. They now see that it is in their interests to do so. As to proposal (d) in paragraph 5877 of my written evidence regarding monthly returns, I would keep the Native States separate. I quite agree that this spoils to a considerable degree what we are seeking. If a pressing factory refused to send figures, I would make it a penal offence. If we do that, we should be held responsible for not keeping the information confidential and, if any information leaked out of my office, we should be liable to the same penalty. There is an excellent system on these lines in force in the Department of Statistics (formerly the Census of Production office) at the Board of Trade. No complaints are ever made; they know that no leakage is possible. I would make penalty clauses on both sides.

5905. As to the question of licensing, I should go slowly. First of all, I would start with the compulsory submission of statistics. I have quoted the Law of Congress regarding the United States of America returns in an appendix to my Memorandum on Cotton Press Returns.

5906. (Mr. Hodgkinson.) The figure for domestic consumption, i.e., extra mill consumption is fixed every year in consultation with the Bombay Cotton Trade Association. It is estimated at a pound per head. I have made enquiries from each local authority and found that this was not very wrong, though conditions in the Punjab and Madras are quite different. It is very hard to fix on a figure as conditions are so very different in the different provinces. In 1907, it was settled in consultation with the Bombay Cotton Trade Association to adopt a conventional estimate of 750,000 bales, and this estimate continued to be adopted up to the year 1911, when it was changed to 450,000 bales, as the previous estimate was considered to be excessive. In 1915, the figure was raised to 1,000,000 bales, as a special case, owing to the very low price of cotton prevailing in that year, due to the war. In 1916, the Cotton Trade Association again revised the estimate and put it at 750,000 bales and this estimate still continues. I ask them for figures every year and change them accordingly. They are very helpful in these matters.

5907. (Mr. Roberts.) I do not get reliable figures in regard to hand-ginned cotton. It is a very difficult thing to arrive at the figures. We can only work them out indirectly. It is a serious factor especially in the colder parts. In the case of very small factories, I consider that they should all come under the Factories Act.

5908. As regard the question of classification of Punjab-American cotton into a separate sub-head under "Bengal-Sind," I wrote to the Punjab and they said that they were waiting for the report of the Committee before they could come to any conclusion. As regards Hyderabad, the Cotton Trade Association have agreed to the classification called *gorani*. It is very difficult to get these things done through the Cotton Trade Association. It was only by putting considerable pressure on the Association that they gave a new classification for Hyderabad cotton. They naturally object to increasing the trade descriptions of cotton.

5909. I have prepared a short note on the posting of cotton prices in small up-country markets which I now hand in.

5910. (Mr. Wadia.) I am not in a position to say definitely if the publication of Bombay and Broach prices in up-country markets would cause any confusion. This raises a large question on the actual methods of marketing cotton that obtains in the cotton-growing provinces.

Supplementary written statement submitted by Mr. G. FINDLAY SHIRRAS.

Note on publication of prices of cotton at up-country markets.

5911. In 1916, a suggestion was made by Professor J. A. Todd for the publication in selected *mofussil* markets of telegraphic reports of the prevailing prices for cotton in the principal world markets. The Government of India asked the opinion of Local Governments on the proposal and they replied to the effect that it was either not necessary or would not be of much use to the actual growers. For various reasons (e.g.,

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absence of a market close to where the cotton is grown, cultivator's indebtedness or their inability to carry the produce to the market) the growers were generally in the hands of the intermediaries who, in some provinces, enter into contracts which bind the cultivator to deliver over his cotton at a price fixed long before the marketing season. Another ground that may be urged against the proposal is that the proposed telegram would not be of much use as it would probably arrive after the day's business was mainly concluded and would not, in any event, cover fluctuations occurring during the day. It is, on the other hand, obvious that in provinces in which the growers are capable of utilising the telegrams it would be beneficial to them, and for the matter of that to India and the world outside, if the growers were supplied with the information, which would help them in securing better prices for their cotton and thus stimulate larger production. The only two provinces which accepted the proposal are the Punjab and Ajmer-Merwara. The Government of the Punjab, on the basis of an interesting report of Mr. W. Roberts, Professor of Agriculture, Lyallpur, on his tour in Egypt, America and Japan, an extract from which is given below, suggested that the Agricultural Officer at Lyallpur should receive Bombay prices daily, and also Liverpool, New York, and New Orleans prices, if possible, and that Lyallpur prices should be posted at outlying markets in the Punjab.

"Egypt is a very small highly developed country with telephone connection from Cairo and Alexandria to all parts of the country. It is a very simple matter, therefore, to put up Alexandria, Liverpool and New York prices in the various markets in the interior and there is no doubt that the system is very useful. In India, the conditions are different and we are not dealing in such a high grade article as Egyptian cotton. I consider, however, that it would be very advisable that the Agricultural Officer at Lyallpur should receive Bombay prices daily, and also Liverpool, New York, and New Orleans prices, if possible."

(2) The question whether agriculturists get fair prices for their cotton and if not, what steps should be taken to secure better prices for them, was also discussed in a conference held at Lyallpur in April 1917, and the conclusion it came to was that the variations in prices the *zamindars* get on the same day in cotton, both *deshi* and American, were so great from place to place that it was evident that they did not conform to any standard and the remedies it recommended were, among others, the following:—(a) Daily publication of the Bombay prices of Broach, Sind Punjab American and Sind-Punjab qualities of cotton to be made at various cotton centres in the colonies; (b) Lyallpur prices to be also given to other centres.

(3) The Chief Commissioner, Ajmer-Merwara, was of opinion that although the growers of cotton were, owing to their indebtedness, almost entirely at the mercy of traders, an authorised communication of the Bombay rates would render those cultivators who were not deeply encumbered, less dependent on middlemen and press owners and would increase their chances of securing a fair value. He, therefore, suggested that telegraphic reports of Bombay prices should be sent to Beawar and Kekri, the principal cotton centres in Ajmer-Merwara. As nearly all the cotton in Ajmer-Merwara finds its way to Bombay, the Chief Commissioner thought it unnecessary for any prices other than those prevailing in the Bombay market to be reported.

(4) With the permission of the Government of India, I discussed the suggestions of the Punjab and Ajmer-Merwara referred to above, with the Cotton Trade Association, Bombay, who intimated their willingness to telegraph, on payment, to Lyallpur, Beawar, and Kekri the daily prices of certain grades of Indian and foreign cotton, and the Local Government concerned were asked by the Government of India in October last to make the necessary arrangements in consultation with the Secretary of the Cotton Trade Association.

(5) The beginning thus made in the Punjab and Ajmer-Merwara regarding the publication of cotton prices should perhaps be carefully watched before moving further in the matter.

X.—Bhopal.

Mr. TALIB ALI THAWAR, Manager of the Sultania Cotton Manufacturing Company, Limited, Bhopal.

EXAMINED AT SEHORE, NOVEMBER 1917.

Written statement.

5912. *Suggestions for the improvement of Indian cotton.*—(a) We feel it necessary that the staple yielded from year to year ought to be uniformly good and care should be taken that it does not deteriorate owing to the use of mixed inferior seed.

(b) We recommend that Government may open a cotton farm in each district as a model to be followed by the cultivators and also as a means to educate and advise the cultivators regarding the latest improved methods and economic cultivation of cotton. In this farm only the best seeds, e.g., American and Egyptian seed, may be experimented upon to ascertain how they flourish on the particular soil.

(c) Government should arrange to sell the best seeds to the cultivators at the lowest price, so that the seed merchants may find it impracticable to sell their seeds which are generally inferior. Usually the cultivators who are extremely poor buy seeds from merchants on extortionate terms, i.e., instead of paying for seed in cash, which the poor cultivators are unable to do, they return the value in the form of cotton yielded from the seeds at more than 25 per cent. less than the market price. Government also should sell the seeds on credit to the cultivators to enable them to resist the temptation of dealing with the seed merchants on the above terms.

(d) As a further precautionary measure, the Government may by enactment prohibit the sale of seeds except through the Government farms.

(e) Government may employ a suitable expert in each district who should visit the crop area and advise the cultivators the economic methods of growing better stapled cotton and maintaining uniformity of quality year after year.

(f) The Government farm should aim at making the long stapled cotton more remunerative to the cultivators than the ordinary Indian type. Then only the cultivators will be encouraged to maintain the quality and the staple of cotton.

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(g) If, as a result of enforcing the above suggestion, cultivators throughout the country are induced to grow long stapled and better class of cotton, it will be a great economic advantage to the whole country and more especially to textile industries.

IV—MANUFACTURE.

(a) Ginning and pressing.

5913. (36) **Type and number of gins and presses.**—We have six single roller gins and one D. Stewart hydraulic cotton press.

5914. (37) **Size of bale.**—The size of the bale of 400 lbs. is 4' x 15" x 16".

5915. (38) **Saw gins versus roller gins.**—Saw gin is superior to roller gin in outturn, it also takes less power. The roller gin mechanism is totally different from saw gin, which is fed with cotton by a lattice simultaneously. Therefore cotton is fed regularly, while the single roller gin is fed by manual labour and hence irregularly, one man can feed three to four saw gins while he can manage only one single roller gin.

5916. (39) **Effect of saw gins on Indian cotton.**—Saw gins are generally used in America where there is a soft and long stapled cotton, in India it is used only in Dharwar District. The reason why it is not used throughout in India is that the cotton grown in India has a short staple and the cotton seed is very stiff so after ginning by saw gin there remains to some extent lint attached with cotton seed whilst it is not the case with the single roller gins.

5917. (40) **Factory labour.**—Formerly the labour was very cheap but it is increasing more and more as time advances as all the things required for maintenance are getting dearer day by day.

5918. (41) **Effect on machinery of replacement of short staple cotton by long staple.**—There is no alteration required for ginning long and short stapled cotton.

Mr. TALIB ALI THAWAR, called and examined.

(Translation.)

5919. I am the Manager of the Sultanpuri ginning factory in Bhopal. We have 85 gins. They are all single roller gins. The factory is owned by Sir Ibrahim Rahimtullah, but it is worked under the name of Rahimtullah Hajibhoj and Company and the State is partner in that Company to the extent of half.

5920. I am trying to grow some American cotton on a little plot adjoining the factory. It is an American type, but of what variety it is, I cannot say. I think the crop of this American variety would be better than *deshi* cotton in normal years, but this year, owing to heavy rain, the crop was ruined. I have never grown any *deshi* cotton.

5921. The seed of cotton sold by the ginning factories to cultivators is very mixed. I therefore recommend that the Government should open seed farms at a great many centres and arrange to sell selected seed at a cheap rate. The cultivators do not pay for seed in cash. They pay for it in kind. They return the value of the seed in the form of cotton at more than 25 per cent less than the market rate. The price of *kapas* here varies from Rs. 55 to Rs. 60 per *mani* of four maunds, i.e., 396 lbs. It is true that real *mani* here is equal to four maunds of 96 lbs. i.e., 384 lbs. When we buy cotton we buy it on the basis of the *mani* of 396 lbs., i.e., twelve lbs. more than the selling weight.

5922. I have recommended in my evidence that Government should prohibit the sale of seed except through the Government farms. I did so because the seed sold by the ginners is very mixed. We have a Legislative Council in the State with powers of enacting laws and regulations.

5923. I have said in my written evidence that the saw gin is superior to roller gin. I have no practical experience of saw gins, but I think the saw gin cleans cotton better than the roller gin and takes less power to drive.

5924. There is no artificial damping resorted to in our ginning factory or in other ginneries in Bhopal. I have been told that cotton is damped in Khandesh before being put through the opener. The other forms of adulteration are that the buyers of *kapas*, when they bring it in, do not, as a rule, separate good cotton from bad cotton before we are asked to gin. The only man who separates good cotton from bad is the buyer for the Burhanpur Tapti Mills.

5925. The ginning charges are twelve annas for 100 lbs. of *kapas*. The charge is made on the weight of *kapas* and not on lint. The pressing charges are Rs. 6 per bale of 400 lbs. I do not buy or sell *kapas*. I only gin cotton on commission.

5926. The ginning percentage is 34 to 35 per cent. I do not know by what name the cotton is sold in Bombay. I am not a dealer. I see no difference between the Indore and Ujjain cotton and the cotton from Bhopal. Bhopal perhaps represents a better class of cotton than Indore, but not so good as Ujjain. It stands fairly well as regards quality.

Mr. M. DAULAT RAI, Jagirdar, Mustajir and Superintendent of Octroi (Customs), Bhopal State.

EXAMINED AT SEHORE, NOVEMBER 20TH, 1917.

No written statement was submitted by the witness.

(Translation.)

5927. (Mr. Wadia.)—I am Jagirdar, Mustajir and Octroi Superintendent of the Bhopal State. There is an export duty both on *kapas* and cotton. The duty on ginned cotton is greater than on *kapas*. On *ruji* (lint) it is Rs. 2 per maund of 40 seers for unpressed cotton and on pressed cotton the duty is Re. 1 per bale. The rate per bale is lower as an inducement to cultivators to have their cotton pressed in the State pressing factory.

5928. I have got lands of my own, 600 *bighas* in extent. Of these, twelve *bighas* are under cotton. I grow *malvi* cotton, some long staple and some short. It is a mixture of all kinds. I sell it to the merchants at the ginning factory. Last year I got Rs. 9 to 10 per maund. No price has yet been fixed this year.

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5929. Being Customs Superintendent, I can say that there is no damped cotton coming in as it used to do some ten years ago, as the cultivators can not now get a good price for damped cotton.

5930. The ginned cotton from Bhopal goes to Bombay, but some *kapas* is also sent to mills in British territory at Narsingpur, Sohagpur in Hoshangabad, to the Indore State and the Gwalior State. The export duty on *kapas* is Re. 1 per maund.

XI—Gwalior.

Mr. J. G. HAMMETT, M.I.M.E., Mill Manager, Binod Mill, Ujjain.

EXAMINED AT UJJAIN, NOVEMBER 21ST, 1917.

Written Statement.

I.—AGRICULTURAL EXPERIENCE.

(a) "Deshi" short staple cotton.

5931. (1) **Experience.**—I have been in Akola three years and Ujjain four years and I have visited many times Gujarat districts. I am not in touch with the cultivators.

5932. (2) **Varieties.**—The varieties with that I am acquainted are—

Nargaon	12 to 15 per cent. loss in Blow room.
Amraoti	9 " 13 " " "
Pachora	12 " 18 " " "
Pulgaon	12 " 14 " " "
Sawginned	12 " 16 " " "
Shiagaon	12 " 16 " " "
Waida	12 " 16 " " "
Agra	8 " 12 " " "
Akola	10 " 14 " " "
Akot	12 " 15 " " "
Virampore	12 " 15 " " "
Barst	15 " 20 " " "
Bagalkot	16 " 22 " " "
Bassim	12 " 16 " " "
Bhawnagar	12 " 18 " " "
Broach	8 " 12 " " "
Bhusawal	12 " 15 " " "
Bijapore	12 " 18 " " "
Kumta	18 " 22 " " "
Chalisgaon	12 " 18 " " "
Chickley	12 " 16 " " "
Dhamangaon	10 " 14 " " "
Dharwar	14 " 18 " " "
Dhollera	14 " 18 " " "
Dhulia	12 " 16 " " "
Chichpur	12 " 15 " " "
Hao	9 " 12 " " "
Hinganghat	10 " 13 " " "
Jualna	14 " 20 " " "
Jalgaon	12 " 18 " " "
Khamgaon	12 " 16 " " "
Khandwa	12 " 16 " " "
Karanja	12 " 16 " " "
Mohwa	12 " 16 " " "
Murtijapur	12 " 16 " " "
Malkaporo	10 " 14 " " "
Naga	14 " 16 " " "

(2) Malwa Cotton List, and cotton used in Binod Mills:—

Agar	14 per cent. and fair staple, one of the best Malwa cottons.
Alot	14 " Short staple.
Akodia	14 " Fair staple.
Bakani	13 " Short staple.
Baram	12 " " "
Barnawar	15 " Fair staple.
Barnagar	16 " " "
Khujnere	13 " " "
Kalapipal	12 " " "
Khilchipore	15 " Short staple.
Khirabad	15 " " "
Manawar	20 to 25 per cent. Short staple.
Nagda	12 per cent. Fair staple.
Nalkhera	13 " " "
Palia	13 " " "
Rajgarh	10 " Short staple.
Sonkatch	15 " Fair staple.
Sajapore	14 " " "
Sarangpur	14 " " "
Susner	14 " " "
Sujalpore	14 " " "
Unhel	13 " One of best stapled cottons.
Ujjain	15 " Fair staple.

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Mr. J. G. HAMMETT.

[Continued.]

5933. (4) **Yields and profits.**—Short-stapled Malwa *deshi* cotton generally produces 638 lbs. Agricultural profits generally are about forty per cent.

5934. (5) **Rotations and manures.**—So far as I know, they do not use any kind of fertilisers for cotton except in a few districts.

5935. (6) **Comparative returns.**—Generally the difference between the production of long-staple and short-staple cotton is 20 to 25 per cent. increase in favour of short-stapled.

(2) In comparison with other *deshi* crops the production is about twenty per cent. less in slightly longer stapled cotton.

5936. (7) **Conditions affecting increase in area.** It fluctuates, I presume, according to success of season. An increase may be attained by using fertilisers.

5937. (8) **Uses of seed and seed selection.**—Seeds are for re-growing and food for cattle, also extracting cotton oil, which is largely used for cooking and for mixing with other oils, also hair oil. After the oil is extracted, these seed-cakes are also used for feeding cattle and manure.

(2) I believe seed is sometimes selected as far as possible. Hand-ginned seed is given preference for sowing.

5938. **Necessity for care in ginning factories.**—I am of opinion that much more care is required in ginning factories in keeping the seed from different districts separate so as not to mix the staple, and I find there is one very bad practice of forcing large quantities of cotton through the gin by working them at great speeds. By this practice much seed is broken and left in the cotton. For I find, at some places, they run their machines to produce fifty to sixty lbs. per hour and even more, while for good ginning not more than forty lbs. per hour is proper when the cotton would be cleaned and more free from seeds.

(b) "*Deshi*" long staple cotton.

5939. (11) **Varieties.**—The following are the districts in Gujarat:—

Navsari, Bardoli, Siyan, Kim, Rander, Sachin, Surat, Itola, Baroda, Palage, Ankleshwar, Broach, Ahmedabad.
Kathiawar cottons.
Dhollerias—Wadwan and Bhavnagar.

5940. (15) **Conditions affecting increase in area.**—In my opinion, the necessary things for improvement of crops would be proper irrigation and fertilisers. The season generally for long-staple is from December to March.

5941. (16) **Suitability of existing varieties.**—I am of opinion that all cotton growing districts can be improved by greater care in preparing the land and sowing and by proper fertilisers and irrigation and care in gathering and storage.

5942. (17) **Prevention of mixing of different varieties.**—This largely depends on the care taken in ginning factories and in gathering as mentioned in paragraph 5938 above.

IV. MANUFACTURE.

(a) *Ginning and pressing.*

5943. (38) **Saw gins versus roller gins.**—The gins most generally used in India are Macarthy gins or roller gins. The objection to saw-gins I generally find is that it takes too much out of the cotton and has a tendency to crack the seed.

5944. (40) **Factory labour.**—Shortness of labour is, I believe, experienced throughout India. We spend sums of money in bringing men from all parts of India, but most of them do not remain long.

5945. (41) **Condition of cotton.**—We do not find the delivery of cotton to the factories particularly objectionable.

5946. (42) **Effect on machinery of replacement of short-staple cotton by long-staple.**—If short-staple cotton were replaced by long-staple cotton, we should have to change all the diameters of the draft rollers. This would take us back to the time before the Cotton Frauds Act was removed, when we used larger rollers.

(b) *Spinning and weaving.*

5947. (43) **Counts spun and market for yarn or cloth.**—We spin from 6½s. counts to 40s. counts. Counts from 14s. to 40s. are used for weaving and also counts from 6½ to 28s and even 30s. We sell all over India.

Mr. J. G. HAMMETT called and examined.

5948. (*President.*) I have had considerable experience of the cotton trade extending over a period of 44 years. I have given in my written evidence a list of the various types of indigenous cotton in the Gwalior State. The cottons shown in the list that I have given you are the cottons that I have most to do with. It is all *malvi* cotton really. It is all short staple. The quality is mixed. The best are *Agar*, *Khajur*, *Unhal* and *Susner*. *Nagda* is a fair staple. The length of staple of *Susner* is about ¾ths of an inch. The staples of the best *malvi* cotton varies from ¾ths to 1½ths inch. We import longer staple cotton such as Gujarati, Westerns and Southern from outside. Three-fourths inch is the maximum of the staple of the cotton I get locally.

5949. We do not gin cotton in our mills. The cotton reaches us in fairly good condition. The cotton is delivered in *boras* in open carts. Fully pressed bales also come in carts. The cleanliness depends on the quality and also in the ginning. They have a very bad habit here of forcing quantities of cotton through the gins at the rate of sixty, sixty-five or seventy lbs. an hour when forty lbs. an hour is ample for good ginning in a Macarthy gin. The cotton is very variable in staple. It is very badly mixed. To improve that, ginning should certainly be done more carefully. The seed would then be properly cleaned and not crushed.

5950. (*Mr. Wadia.*) All the cotton comes in very mixed. That is easily apparent from the length of the staple. There is always short staple cotton in it which shows that there is a mixture. We have three qualities which we mix. We import some Gujarati and Navsari cotton to spin 28s to 40s.

5951. We sell our cloth not only locally, but in every part of the country. We sell it in Agra, Delhi, Calcutta and all parts of India.

Gwalior.]

Mr. LUKMANBHOY K. S. NAZARALLY.

5952. I would prefer for spinning purposes to have *malvi* cotton brought in separately. It is not brought in separately at present. My firm would be prepared to pay a premium for unmixed cotton. We would prefer to do that to encourage the cultivators but all cottons in India are mixed; mixing is not confined to *malvi*. The mixing is mostly done in the ginning factories. Sufficient care is not taken there to keep the seed separate. Ginning factories should take care to clean their gins after ginning each customer's cotton. I do not know whether there are gineries in each of the districts I have mentioned. Most of cotton in this district is ginned at Ujjain, where we have nine to ten ginning factories. Some of the cotton is brought in from fifty to hundred miles out.

5953. (*Mr. Hodgkinson.*) *Malvi* cannot spin better than 20s. That is the limit with the ordinary process.

5954. (*Mr. Henderson.*) We buy two classes of cotton locally, *malvi* and *deshi*, but we call it all *deshi*. There is hardly any distinction in the cotton bought locally. I do not know the native names. I do not know whether you can get what they call pure *malvi* in this market. We use Ujjain No. 1 which is made up of different qualities. I think all the cotton is very much the same. Last year the price of the cottons mentioned in paragraph 5933 of my written evidence was about Rs. 14 to 19 per *kacheha* maund of 41 lbs. of ginned cotton. There was a great fluctuation of course. Some had a higher price than others. Whenever the Surat market goes up, this market also goes up. *Nagda* cotton is dearer than the other cotton in the list. There is no constant ratio between the different cottons, but they all fluctuate according to the price of Surat. All the cottons have been gradually rising in price for the last two or three years. For instance, we used to buy *Nagda* and *Khilchpar* at Rs. 11 per maund, say three and a half years ago. *Khilchpar* to-day is about Rs. 18 per maund.

5955. We mix a little better cotton sometimes with a little inferior in order to meet the rate of yarn in the market for certain counts of yarn. We would rather do the mixing ourselves than have it done by the ginners.

5956. (*Mr. Roberts.*) We have a cotton selector, an old man of this district, who selects the cotton and brings it to us and we have to say whether we will buy it or not according to the rates of the market. We have sometimes to pay different rates at the same time for the same cotton. We pay a different price for cotton from *Susner* and *Agar*. The difference in price might be a rupee or two per *kacheha* maund of 41 lbs.

Mr. LUKMANBHOY K. S. NAZARALLY, Proprietor, Cotton Ginning, Spinning and Weaving Mills, Ujjain.

EXAMINED AT UJJAIN, NOVEMBER 21ST, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(a) "*Deshi*" short staple cotton.

5957. (1) **Experience.**—In the cotton growing district Ujjain I have been living for the last thirty years and have been in actual touch with cotton cultivators of the surrounding villages. I have a ginning factory at Ujjain and have thirty gineries in Malwa.

5958. (2) **Varieties.** The following varieties of cotton are grown in Malwa. In Malwa, although Malwa cotton is coming in Ujjain cotton market from small districts and villages representing themselves with the various names of their productive places, with a small difference, the following are the varieties worth knowing:—

(i) *Malvi proper.*—This variety is generally grown in Malwa in large quantity. This quality is rather inferior to Broach in softness and staples (fibres), but is superior to the product of Bengal, Berar and Khandesh and also the land of Malwa is specially suitable to it (Malwa Khas). From this real 28 counts of yarn are being spun.

(ii) *Bani* (short staple cotton).—This quality is only growing in irrigated area in fifteen per cent. The fibre of this cotton is rather shorter than *malvi* and stronger but has more whiteness. In certain districts, the cultivators are sowing this quality (*bani*) mixed with *malvi* and picking it mixed, hence it is impossible to separate the two. Though it comes separate in very small proportion, yet the local merchants are ginning this cotton after mixing it with *malvi*.

(iii) *Exotic cotton*, whose seeds have been introduced in Malwa for the last six years. Although in Malwa, the staple of this variety has turned out soft and good in colour, but in test the strength of staple is less. In the first year, the exotic cotton gives a good staple, but year by year after growing it gives shorter staple in length, resembling *malvi* cotton. Yet it is superior to *malvi* in fibre (staple) in many respects.

5959. (4) **Yields and profits.**—The expenses per *bigha* come to an average of Rs. 14, while the yield is three maunds pukka, worth about Rupees 25.

5960. (6) **Comparative returns.**—The yield of short staple cotton per *bigha* is 3¼ maunds, while that of long staple is three maunds per one *bigha* and hence the cultivators prefer the shorter. Yet they grow both the qualities as the longer one is more valuable than the shorter one.

5961. (7) **Conditions affecting increase in area.**—Ten years ago when the cotton standard rate was much less and the chief exporting product was opium, the cultivators were not used to grow cotton more. Grain and opium were largely sown. Now when the opium growing has totally been prohibited by the Government, the agriculture is only depending on cotton and other grain crops. And as the cotton standard rates are increasing, the grain crops are lessened and the cotton growing is increased. Now to increase the cotton crop in this country depends on the lessening of other grain crops, otherwise it is quite impossible.

5962. (8) **Uses of seed and seed selection.**—Cotton seeds of the first crops are preferred for sowing by the cultivators and hence the cotton is separately heaped in the factories. But the cultivators have no experience whether the seeds they purchased for sowing are of first or second crop. The seeds are used here only for sowing and animal food. The seeds selected for sowing are not ginned by hand but by machines,

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Mr. LUKMANBHOY K. S. NAZARALLY.

[Continued.]

II.—COMMERCIAL ASPECT.

5963. (30) **Local trade customs.**—Regarding local trade customs, I beg to state that the cotton business here is only carried on by cash, agency future buying and advances, and no contracts are being made.

5964. (31) **Standardization of commercial names.**—The cotton coming in the Ujjain market by the name of Malwa cotton is called *malvi* cotton, though in certain districts, there is a proportion of *bani*. *Malvi* is counted as superior to others and is known by the names of the productive districts. But owing to the climatic changes (changes in weather) these names have also been changed in the preceding years as the same quality is produced in the other districts and is known as *malvi*. But in Ujjain market, inferior cotton is also coming from other districts and those qualities are also recognized by the same (district) names and hence *malvi* and *nimari* cotton which come from Manawar side are the chief qualities of cotton.

III.—MANUFACTURE.

(a) Ginning and pressing.

5965. (36) **Type and number of gins and presses.**—Single roller gins are only used in our Malwa Factories. In Bhind (District Gwalior) double roller gins are used as the crop has a shorter staple.

5966. (37) **Size of bale.**—The measurement of the bale produced is 50 x 20 inches.

5967. (41) **Condition of cotton.**—The great objection is mixing which is specially occurring at the following four times.

- (1) *While sowing.*—The cultivators are getting seeds of the short and long staple mixed with each other and those mixed seeds are being sown.
- (2) *While picking.*—When the crop is ready, the cultivators are bringing the crops picked mixed for sale in the market or factories.
- (3) *In bazaars or factories.*—Merchants heap these cottons of the inferior and superior qualities mixed as they get them from cultivators in bazaars as well as in factories.
- (4) *In local centre.*—While the ginned cotton is coming in local centre the merchants are pressing these cottons mixed so as to conceal the real quality.

(2) This sort of mixing is specially affecting real *malvi* cotton and hence it is necessarily objected to by the Government which advises the cultivators to have the cotton picked in separate qualities and brought to separate market. If this practice be fully carried out, the other three sources of mixing will soon be stopped.

(b) Spinning and weaving.

5968. (43) **Counts spun and market for yarn cotton.**—We spin from 5's to 28's counts at present from Malwa products while the yarn market reaches to Indore, Burhanpur, Bombay, Amedabad, Cawnpore, etc.

5969. (45) **Effect on cotton market of replacement of short staple cotton by long staple.**—If long staple replace short staple in Malwa, the effect on the cotton market will be generally very bad, for the climate of this country is not suitable for longer staple.

Mr. LUKMANBHOY K. S. NAZARALLY called and examined.

5970. (Mr. Wadia.) I am the proprietor of Ujjain Cotton Ginning, Spinning and Weaving Mills. I have fifteen thousand spindles and 264 looms. I only buy the best *malvi* cotton for use in my mills. I own 22 ginning factories also. I generally buy *kapas* and gin it myself. I sometimes buy lint as well. In my opinion, Agar, Barod, Shujahpur, are all one class of cotton more or less mixed, but in Susner cotton there is an even greater mixture of short staple. The prices in all the districts on the same day for *kapas* are however more or less the same. The price of lint is also about the same but in Neemuch and districts round about the price is lower because the staple is shorter.

5971. I generally get *kapas* as well as lint. There is no damping here. I also buy and sell cotton from my ginning factories besides using it in my own mills. Most of the cotton that I sell goes to Ahmadabad and to Bombay in fully pressed bales and also to Cawnpore. I only sell loose lint and do not press cotton myself. I sell to dealers who get the cotton pressed. Five or seven Ahmadabad mills have got their own buying agency here; and also some Baroda mills. They get the cotton pressed themselves and send it to their mills. I do not buy any cotton except that grown in this district. I do not buy the *nimari* cotton. The *nimari* cotton comes into the Ujjain market. The quality of the *nimari* cotton is worse than that of *malvi*. *Nimari* cotton comes to this market only in the form of lint and not of *kapas*. The figures the proportion of the cotton coming into the Ujjain market are as follows :—

Short staple <i>bani</i>		3 annas
Long Staple <i>bani</i>		2 annas.
<i>Malvi</i>		11 annas.

Nimari will fall under short staple *bani*.

5972. If exotic cottons were grown here, the climate would not be suitable for them, but, if pure *malvi* of long staple cotton were grown it would have a very good effect on the market. If the buyers were to offer a premium for pure *malvi* long staple, the cultivator would grow it. If pure *malvi* were grown by the cultivators and the buyers offered a premium, the cultivators would grow it because I think the price would be up to Broach.

5973. (Mr. Henderson.) My impression is that in four or five years any kind of *kapas* sown in Malaw becomes *malvi*, if the same seed is sown continually every year. The best cotton is Sonakutch. The mixt re in it is only about one-sixteenth. It gets a premium of annas four to six per *kachha* maund of twenty seers. It is clearly all one class of cotton. I purchase No. 1 Ujjain. It is grown in Ujjain itself. No. 2 Ujjain is the cotton which comes from other markets.

Gwalior.]

Mr. SHEIKH GOUS ALI.

Mr. SHEIKH GOUS ALI, Manager, Sorabji Cotton Press, Ujjain.

EXAMINED AT UJJAIN, NOVEMBER 21ST, 1917.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(a) “*Deshi*” short staple cotton.

5974. (1) **Experience.**—I have been stationed at Ujjain in the Malwa Division of the Gwalior State for the last twelve years and have been in touch with cotton cultivators.

5975. (2) **Varieties.**—The *bani* variety of *deshi* short-staple cotton is grown in the district.

5976. (4) **Yields and profits.**—The average yield is about twelve Bengal maunds and the profit about Rs. 32 per acre.

5977. (5) **Rotations and manures.**—On rich soil the cotton crop is succeeded by *rabi* crops such as wheat, gram, linseed, etc., and on poor soil by *kharif* crops, such as *juar*, *bajra*, *til*, etc.

5978. (7) **Conditions affecting increase in area.**—The area under short-staple cotton does not fluctuate largely. There is possibility of an increase under short-staple cotton, for it brings better return to the cultivator. It is difficult to check its increase.

(b) “*Deshi*” long-staple cotton.

5979. (11) **Varieties.**—The *malvi* variety of *deshi* long-staple cotton is grown in the district.

5980. (13) **Yields and profits.**—The average yield of *deshi* long-staple cotton is about six Bengal maunds and profit about Rs. 15 per acre.

5981. (15) **Conditions affecting increase in area.**—Irrigation facilities would help an increase in the area under *deshi* long-staple cotton.

5982. (17) **Prevention of mixing of different varieties.**—To prevent the mixing of *deshi* long-staple cotton with *deshi* short-staple in the field, suitable arrangements should be made to supply the farmers with pure long-stapled cotton seed and in the factory nothing but legislation can stop it.

5983. (18) **Uses of seed and seed selection.**—The seed is used for sowing and fodder and the surplus is exported. Generally no seed selection is made. Hand-ginned seed is preferred to that of the machine-ginned.

(c) Exotic cotton.

5984. (28) **Importation of seed.**—If it is found desirable to introduce the sowing of the American or Egyptian cotton here, seed from America and Egypt should be imported and the same should be sown as a trial side by side in one and the same field with selected seed of such cotton grown in India, and to begin with the experiment should be made only on a limited scale and wherever it may suit to do so.

II.—COMMERCIAL ASPECT.

5985. (30) **Local trade customs.**—The present custom of the market for *kapas* sale is that some cultivators bring and sell their *kapas* direct to the buyers and some through commission agents. Cotton is sold through commission agency for which there are no fixed rules and regulations. The cotton sellers have to depend wholly on the mercy of the commission agents who, in addition to their commission, charge the farmers with several other expenses as they like.

5986. (31) **Standardization of commercial names.**—The commercial name of the long-staple cotton is *malvi* and that of the short-staple *bani*. There is also another variety of short-staple cotton called *nimari* which finds its way here from Manawar, a place in the Nimar District of the Gwalior State. The long-staple cotton can be standardized by the name *malvi* and the short one by *nimari*.

5987. (32) **Buying agencies.**—The best form of buying agency is to have a regular cotton market established where both the buyers and the sellers may operate freely in open competition.

III.—STATISTICAL.

5988. (33) **Improvement of cotton forecast.**—The cotton forecast, as at present published, is not quite accurate and is also issued very late. The *patwaris* and landlords should be made to submit a report either weekly or fortnightly to the highest Land Record authority who should get the same published in collective form in the *Gwalior Government Gazette* as well in the weekly paper *Jayaji Pratap*.

5989. (35) **Publication of Liverpool and Bombay prices.**—The daily publication of Liverpool (also American) and Bombay cotton prices in the up-country markets would be useful.

IV.—MANUFACTURE.

(a) Gining and pressing.

5990. (36) **Type and number of gins and presses.**—Nasmyth type of presses and Platts' Single Roller gins are used on this side. I have in my charge two such presses and a gin factory with 48 gins.

5991. (37) **Size of bale.**—The size of the bale produced in our factory is 50" x 17" x 21".

5992. (38) **Saw gins versus roller gins.**—Saw-gins are not at all suitable for the *kapas* produced in this district.

5993. (40) **Factory labour.**—Scarcity of labour is felt more and more every day which has also caused the wages to go very high.

5994. (41) **Condition of cotton.**—Cotton arriving into Ujjain from Manawar (Nimar District) contains a large percentage of leaves which is very objectionable.

5995. (42) **Effect on machinery of replacement of short-staple cotton by long-staple.**—Assuming that if short-staple cotton were to be replaced by long-staple cotton, no substantial alteration in our machinery would be necessary.

Gwalior.]

Mr. P. SABAPATHY.

V.—GENERAL.

5996. (46) **Attitude of buyers to improved cottons.**—The buyers in the past have not shown any tendency to encourage the growth of improved cottons by offering a premium for them.

Mr. SHEIKH GOUS ALI called and examined.

5997. (Mr. Wadia.) I am the manager of two cotton presses. One is the Sorabji cotton press and the other press belongs to Rai Bahadur Omkarji Kestur Chand of Indore. I have also a ginning factory of 48 gins here in Ujjain in the same compound as the Kestur Chand press. These gins and presses never buy *kapas* or lint cotton. They only work for customers. I do not deal in cotton at all. Rai Bahadur Kestur Chand has got a shop in the town. There he does business as an *aratta* for his constituents. As far as the factory is concerned, he buys nothing. I have nothing to do with the buying business. As a factory owner, Mr. Kestur Chand does not do any buying business.

5998. The ginning charges vary between one-eighth and two-eighth per *mani* of six maunds (Bengal) *kapas*. I cannot give the present rate as the season has not yet started. It will be something like Rs. 2-12 to Rs. 3 on account of the higher rate this year for material, i.e., rollers and knives, etc. The roller which we used to get at Rs. 35 now costs from Rs. 65 to Rs. 75. That makes a great difference. The price of hoops has increased three times and we cannot get some things at all. The pressing charge is Rs. 6 per bale this year. The new season will commence in January but last year's rate will stand for the next season also. All ginning factories fix their own rates. There is no combination of the ginning factories, but there is a pool among presses. Different rates are paid to the pools at different time. Sometimes it is Rs. 1-8 and sometimes Rs. 1-12. I cannot tell you what the rate was last year.

5999. There is some damping of cotton done in this district. Some dealers damp and do it deliberately. The practice is decreasing and in most cases has practically stopped. This is not due so much to the mills paying less for damped cotton but to the fact that the European and other foreign firms refuse to buy damped cotton and the Indian merchants have necessarily followed suit. Very little damping is done now but some traders damp for the Bombay market.

6000. In my factory I gin various kinds of *kapas*. *Malvi kapas* gives between 25 to 28 per cent of lint. *Bani* gives 30 to 35 per cent. The first pickings give a higher percentage of outturn than the latter ones. *Nimari kapas* does not come into the market as a rule but last year a small quantity was imported. As a rule, only ginned cotton comes in. Last year, *nimari kapas* was ginned in one of the factories here. That also gave the same ginning percentage as *bani viz.*, 30 to 35 per cent.

6001. (Mr. Roberts.) I have stated in my evidence that the buyers do not pay any premium for staple cotton. It is so because the buyers in our market are mostly acting for mill owners. They want superior cotton as well as inferior cotton for mixing purposes. So they do not pay a premium for the former. They generally keep their level of their superior cotton near to that of the inferior. If they were to pay for the superior cotton according to its proper value they would have to pay something more for the inferior than they do at present, for instance, if they were paying Rs. 12 for the superior quality, they pay Rs. 11-12 or Rs. 11-8 for the inferior, if they were to pay Rs. 12-8 for the superior, they would have to pay higher, i.e., instead of paying Rs. 11-8 or Rs. 11-12 for the inferior, they would have to pay Rs. 11-12 or Rs. 12. So they purposely keep the difference as little as possible. So they gain by not paying a sufficient price for the superior cotton and they have never encouraged it by paying the proper price. It is only the exporters, like the Japanese, Messrs. Volkart and Ralli Brothers, who are ready to pay the proper price. The difference in price is so small that there is no encouragement to grow long staple cotton.

Mr. P. SABAPATHY, Agent, Messrs. Volkart Bros., Ujjain.

EXAMINED AT UJJAIN, NOVEMBER 22ND, 1917.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(b) “*Deshi*” long-staple cotton.

6002. (10) **Experience.**—I have been stationed in the following cotton growing places and my period of stay has been :—

	About.
(1) Adoni (in Bellary District), Madras Presidency	7 years.
(2) Khamgaon (in Berars)	9 “
(3) Burhanpur (in Central Provinces)	4 months.
(4) Khandwa (do.)	9 “ (in three stations).
(5) Akola (Berar)	4 months.
(6) Ujjain (Gwalior State)	8 years.

I have been in touch with cultivators in the places where I was stationed for some years.

6003. (11) **Varieties.**—In Ujjain, *deshi* long-staple is grown which is called by local people *malvi*.

6004. **Area under cotton.**—The average acreage under cotton in the past five years (from 1912-13 to 1916-17) was about 3½ lakhs, whereas last year it was over four lakhs and this year over 4½ lakhs. The same is increasing year by year. I think about two-thirds of whole area or over are under cotton now.

6005. (14) **Rotations and manures.**—Manures are not generally applied to *deshi* staple cotton but only to short-staple cotton fields. If manures are applied to *deshi* staple cotton fields, they are bound to give good results. The cotton leaves and dust turned out from cotton press openers are wasted here, whereas in Khamgaon I have seen the cultivators buying this and using this in their fields and getting satisfactory

Gwalior.]

Mr. P. SABAPATHY.

[Continued.]

results. In the same way; I suggest these cotton leaves and dust should be used as manures, besides the cow-dung and other manures should be put in the *deshi* staple cotton fields to improve the yield.

6006. (16) **Suitability of existing varieties.**—When I first came to Ujjain, the two districts, Ujjain and Shajapur, had purely *deshi* staple cotton produced—of “silky and long-staple cotton”—and only during three or four years the dealers began to import the short-stapled *kapas* from Bengal, Kotah and Mewar sides and these seeds were given to cultivators and they began to sow short-staple and further these short-stapled seeds are mixed with long stapled seeds and this mixture of seeds was given for sowing in stapled sowing area. Thereby the usual *deshi* long-staple cotton is becoming deteriorated. Instead of improvement in the usual *deshi* long staple it has now become (1) short staple and (2) long staple deteriorated, hence the inferior types should be prohibited and instead the superior types may be introduced or the whole area should be the usual *deshi* long staple and the same may be improved.

6007. (17) **Prevention of mixing of different varieties.**—I recommend, while purchasing, the *kapas* of different types, i.e., (1) *deshi* short staple, (2) *deshi* long staple, (3) exotic cotton should be stacked and ginned separately and only the first picking arrivals may be done in this way and the seed may be stored in godowns (instead of in open places) to avoid the same being damaged by rains falling in unusual times while this is being done. I suggest the same should be supervised by the persons appointed for this work by State Darbar. At present, in my opinion, at times, far from satisfactory quality of seeds are given to cultivators. The arrangement to give cultivators best seeds should be made.

6008. (18) **Uses of seed and seed selection.**—The seed is generally used for sowing, cattle feeding and for export to Bombay, when the cotton crop is bigger. Seed selection is only practised when exporters buy. For sowing purposes mostly the ginned cotton seed is used.

6009. **General.**—Out of four districts, i.e., Ujjain, Shajapur, Mandsaur and Amjhara :—

- | | |
|--|---|
| (a) Ujjain and Shajapur are stapled cotton districts and little of shorter staple. | } All these cottons go to Ujjain for pressing. |
| (b) Amjhara short stapled district. | |
| (c) Mandsaur is shorter staple than Ujjain and Shajapur. | } This was formerly going to Ujjain for pressing. Now there is a press at Mandsaur where it is pressed. |

In order to keep Ujjain pressed cotton purely of stapled cotton, Amjhara should be pressed there only by granting permission to erect a press there if anyone comes forward to erect one. To improve the Ujjain staple, the best way is to prohibit short stapled *kapas* arriving into this place. This will be preventing the seed being utilized for sowing in stapled cotton area.

II.—COMMERCIAL ASPECT.

6010. (30) **Local trade customs.**—The *kapas* is sold by *mani* of 240 seers which is six Bengal maunds which is equivalent to 493.68 lbs. out of which an average lint turned out of *deshi* stapled cotton is about 140 lbs. per *mani* of *kapas*, whereas the *deshi* short-staple cotton is about 155 lbs. lint per *mani*. The major portion of the arrivals are *deshi* stapled cotton. Short stapled *kapas* are mixed with long staple and brought into Ujjain for sale and at times short stapled *kapas* are brought separately. The *kapas* carts, when they enter into Ujjain, go direct to different gin factories and at times they are left out in the streets for a few hours to get more price or to find out their commission agent and then they go to gin factories. The *kapas* rates are opened by gin factories who buy on their own account. The buyers (other than gin factories) have to pay the same price. At times, different rates are paid in different gin factories. This rate is opened out by ginning factories for first pickings. As for second and third pickings, the rates are paid according to qualities. The *kapas* is sold by cultivators directly in which case the buyers' men weigh the same and mostly it is sold through commission agents and in this case their man weighs the cotton. He gets commission from cultivators as well as eight annas per cent from the buyers. In my opinion, this system is bad, therefore I recommend an open market so that cultivators may get competitive prices for their *kapas*. Regarding ready cotton this mostly comes by rail and cart load from outstations and interior ginning factories. When it arrives here, it is at once unloaded in factory compound and in the godowns in the town. A petty dealer of ready cotton rarely wishes to sell without unloading in which case he sells without the aid of commission agent. Generally, all cotton after it is unloaded is weighed and stacked by the commission agents through whom (brokers) only the cotton is sold. The buyers go and select the cotton and close the bargain and take delivery of the cotton and make payments for the same on the very next day. The commission agents for cotton are mostly shroffs and as for *kapas* they are mostly different commission agents who are grain dealers and others. The system of selling cotton is good, but the buyers are in the dark as to what superior or inferior qualities of cotton arrive into Ujjain. This is only known to the buyers when they go to the place where the cotton is stored and see the same. By having a market the cotton that arrives in a day will be for general inspection of all buyers. After this the holders if they like may sell their cotton at once or store up the same. The cotton is sold per maund of twenty seers (which is half a Bengal maund)-41-14 lbs.

(2) So far as I know, the buyers (mills and exports) do not make any advances on *kapas* and cotton. Future buying or contracts are being done by local dealers themselves, the exporters of late are not doing this.

6011. (31) **Standardization of commercial names.**—Ujjain and Shajapur cotton are called “Ujjain staple,” Amjhara side cotton “short staple.” If both are mixed “Ujjain mixed.”

6012. (32) **Buying agencies.**—The buying agency will be improved by having a market.

III.—STATISTICAL.

6013. (34) **Improvement of statistical information.**—I think it will be very useful to the trade if the State Darbar could give out, by printed leaflets, the weekly pressing done and the arrivals of *kapas* on cotton of every week. A similar return is issued by the Central Provinces Government.

6014. (35) **Publication of Liverpool and Bombay prices.**—I think only daily publication of Bombay rates will do. This will be a useful information for trade.

V.—GENERAL.

6015. (46) **Attitude of buyers to improved cotton.**—Stapled cotton always fetches premium rates.

Gwalior.]

Mr. NARAYAN DAS.

Mr. P. SABAPATHY called and examined.

6016. (President.) I have been stationed in many places, Madras, Berar, the Central Provinces and Ujjain. I was in Khamgaon for eight years and have been in Ujjain for the last ten years, eight years permanently. Westerns in Madras were one of the best cotton I met with. When I left Madras twenty years ago, the staple of Westerns was over an inch. It was a long-staple cotton. Ujjain cotton has a good staple; it is over an inch and a quarter.

6017. In testing *malvi* cotton we generally pull the staple from the cotton in fully pressed bales. The exporters always take it from the fully pressed bales and not from cotton in the field. I do not think that cotton if it is pressed shows a longer staple than cotton on the plant. It will, on the average, be of the same quality; sometimes lower, sometimes higher. I always buy *malvi* as an inch staple cotton. I send my cotton to Bombay. My principals open each lot and if the staple is not long, they remark about it. I can buy *malvi* cotton pure in the market. I can do so by selecting *kapas* as well as by selecting ready ginned cotton.

6018. I buy *kapas* as well as lint. The *kapas* of short-staple and long-staple cotton is brought in mixed. The *kapas* is taken to the ginning factories which allow the carts to come in and fix a price, which is the same both for short-staple and long staple cotton. They do not get the proper price for long-staple cotton. The cultivators bring the carts to the factories and the ginners see the number of carts and, even if it be 500 carts, they fix the lowest rate which they then pay the cultivators though the rate for ginned cotton may be quite different. The Bombay rates have nothing to do with the *kapas* rate. The ginning factory owners get the profit themselves mostly and the premium that is paid for the staple goes in to their pockets instead of to the cultivators. The cultivators get lower prices for the second and third pickings. If the cultivator refuses to sell his good *kapas* to the gin owners, he may unload it himself, if he is a big cultivator, get it ginned separately and dispose of it himself. Generally the gin owners induce the cultivators to sell the *kapas* to them. We have a buying agency only and no ginnery here. We buy *kapas* from Ujjain and from Burhanpur and arrange to have it ginned in one of the ginning factories. If a market were established here, the cultivators would get the competitive price and it would be in their interests. I would like to have a market on the same lines as they have in Akola. Then we can inspect all the qualities and pay prices according to quality. At present, quality is not taken into account by factory owners.

6019. Pure *malvi* is a very good cotton if it is not adulterated. For the last three or four years it has been much adulterated. It is now worse than it used to be. There has been rapid deterioration. *Malvi* is a longer staple cotton than *bani* which in these parts is a short staple cotton.

6020. (Mr. Wadia.) I get my cotton ginned at the Mizamal Nevatia Factory. The charge for ginning now is Rs. 2-12 to Rs. 2-14 per *mani* of *kapas* of 494 lbs. I get my cotton pressed at the same press. I think it is a Nasmyth press. There used to be some sort of private ginning but there was no legal agreement. My firm have a special agreement with the ginning factory. We settle the rate for pressing and ginning. The pressing charge is according to the pool rate and the ginning charge is according to what we may mutually fix.

6021. There is some damping of cotton in this district but it is only slight because the cotton here is leafy and won't absorb much moisture. I do not damp my cotton. Some of the Indian merchants do it. The ginning factories mix various kinds of cotton. We do not mix but gin the different varieties separately. We make type samples for the Bombay market. We have got standard samples. These samples do not contain any mixture. When we buy *kapas*, we specially select it. A European Assistant sometimes comes here.

6022. There are three pressing centres at present in this tract, one at Mandsaur, one at Neemuch and the third at Ujjain. Cotton from three districts comes to Ujjain, i.e., cotton from Ujjain, Shajapur and Amjhera and at times also from Indore. I suggest that Amjhera cotton should be kept separate from Ujjain and then Ujjain cotton would be purely staple cotton. I suggest this because Amjhera is a much inferior cotton and shorter staple. It is mixed with Ujjain cotton which has a more longer-staple. I want a press started at Amjhera so that Amjhera cotton may not come to Ujjain and be passed off as Ujjain cotton.

6023. (Mr. Roberts.) The State could prohibit Amjhera cotton being brought to Ujjain. This has only been done for the last three or four years. Before that we were not getting any short staple cotton in this place. Short staple cotton comes from Kotah and Mewar to Ujjain for the purpose of mixing. I know that ginning factories buy *kapas*. Mr. Naziralli buys *kapas*, gins it and sells it to me.

6024. Sellers as well as buyers and dealers have their own weighmen. If the cultivator wants to sell his *kapas*, it is the factory owner who weighs it. I cannot say whether he gets the proper weight. If the cotton is sold through a commission agent by the cultivator, the commission agent has his own weighmen. The commission agent takes a commission from the cultivator as well as from the buyer: he gets a double commission. This is a system which is not in force anywhere else in India. It is the interest of the commission agent to favour the buyer. The commission agents here are under the influence of the ginning factory owners. If an open market were established, all these disadvantages would be done away with. It will be a benefit to the cultivator. They will get the full price for the best quality of cotton. If it is a long staple cotton it will be paid for accordingly. I certainly think that long-staple would fetch a better price and such markets would encourage the growth of long staple cotton.

6025. The Central Provinces Government issues a weekly leaflet in which the weekly arrivals of *kapas* and the ginning and pressing done and other things are shown. Some similar publication would be a great advantage in Central India.

Mr. NARAYAN DAS, Proprietor, New Gin Press Factories, Mandsaur.

EXAMINED AT UJJAIN, NOVEMBER 22ND, 1917.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(a) "Deshi" short-staple cotton.

6026. (1) Experience.—I have been at Nimbhera (Tonk), since 20 years. I often live there and have actual touch with cultivators.

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Mr. NARAYAN DAS.

[Continued.]

6027. (2) Varieties.—*Deshi* medium-staple cotton like Oomra and Akola cotton is grown there.

6028. Area under cotton.—About 5,000 acres are grown in the whole district of Nimbhera.

6029. (4) Yields and profits.—Yields of 50 lbs. to 100 lbs. cotton ginned per acre are obtained. In irrigated land, a higher yield may be obtained.

6030. (5) Rotations and manures.—*Juar* and *til* are the rotations with cotton. Commonly no manure is used except in some fields. No manufactured manure is used.

6031. (7) Conditions affecting increase in area.—The area fluctuates on condition of rain, but the area and crop have increased as our Nimbhera ginning factory first year (1898) ginned 20,000 maunds *kapas* and last year (1916) it ginned 90,000 maunds *kapas*; this was the production of Nimbhera alone.

6032. (8) Uses of seed and seed selection.—No seed selection is practised on any principle. Hand ginned and machine ginned seeds are used but seeds which are cut and not properly ginned are objected to by cultivators.

(b) "Deshi" long-staple cotton.

6033. (10) Experience.—Since 25 years I am stationed at Jaora and Mandsaur where I have actual touch with cotton cultivators.

6034. (11) Varieties.—*Malvi* long-staple cotton is grown in Jaora and Mandsaur and Merwari short-staple cotton at Neemuch which is the northern portion of Mandsaur.

6035. (12) Area under cotton.—Nearly 80,000 acres are grown under cotton in Mandsaur including Neemuch.

6036. (13) Yields and profits and comparative returns.—Long-staple cotton gives less yield than short-staple cotton, therefore cultivators get more profit from short-staple cotton than at present from long-staple cotton.

6037. (15) Conditions affecting increase in area.—Good seed which gives a large percentage of cotton, and good colour classification and early sowing with irrigation can encourage cultivators to make large cultivation of long-staple cotton.

6038. (17) Prevention of mixing of different varieties.—If buyers will pay a higher price for pure long staple, mixing will be lessened.

(c) Exotic cotton.

6039. (28) Importation of seed.—Importation of direct seeds from America and Egypt is desirable but on the whole I prefer the Indian-grown seeds of the same variety.

6040. General. I often see in the present fields of short and long-staple cotton plants of exotic cotton mostly in Mewar (Udaipur State) districts. If the cotton from plants is picked carefully and separately and ginned and the seeds given to cultivators and sown in proper time, I expect a large production of exotic cotton in these districts. The buyer should also pay keen attention to purchase this cotton at a proper high price to encourage cultivators to increase it.

II.—COMMERCIAL ASPECT.

6041. (30) Local trade customs.—An Agency or syndicate is desirable for purchasing new introduced long-staple at a premium price and should advance money and make future contracts. But this all should be on the principle of encouragement to cultivators.

6042. (31) Standardization of commercial names.—*Malvi*, *Merwari*, *Nimari* cottons are the names of the cottons as they are grown in these districts but these names are not suitable so cotton cannot fetch its proper price in Bombay and Liverpool; as our Nimbhera and Neemuch districts producing Oomra and Akola cotton which is sold in Bombay at Rs. 40 to 50 less per *khandi*. This is a defect in the trade.

6043. (32) Buying agencies.—I recommend that when a new cotton sample reaches Bombay, it should be classified and should be sold accordingly. Otherwise where there is no standardization and classification, sellers suffer and cannot get the proper price.

III.—STATISTICAL.

6044. (34) Improvement of statistical information.—Ginning outturns should be registered and gin owners should be held responsible for giving correct information weekly, also the outturn of hand-ginned cotton should be taken into consideration.

IV.—MANUFACTURE.

(a) Ginning and pressing.

6045. (36) Type and number of gins and presses.—I have Platts' Single Roller Macarthy gins and Hydraulic Baling Presses—

(a) 220 gins in ten factories in ten places in the distance of 140 miles from Nimbahera to Udaigarh.

(b) Two pressing factories, one at Nimbahera, maker J. H. Riley of Bury; one at Mandsaur, maker Duncan Stewart, Glasgow.

6046. (37) Size of bale.—49" × 17" × 19" is the size of the bale produced. It is about ten cubic feet density more than 38 lbs. per cubic foot.

6047. General suggestions.—My general suggestions for increasing the production of long-staple cotton are cheap means for motive power to work gin factories, such as gas, engine, etc. the introduction of Cummin's Patent presses which will press 7 c.f. and keep excellent quality, increased means of irrigation, early sowings, use of artificial manure and dissemination of proper knowledge of modern cotton cultivation to cultivators in the vernacular.

Mr. NARAYAN DAS called and examined.

6048. (President.) I know the local cottons. *Malvi* cotton is grown in the Malwa district, *Mewari* cotton is grown in Mewar. Then there is *Neemuch* cotton and *Nimbahera* cotton. We call a cotton by the name of the district in which it is grown. We sell the cotton by the names of the place, Ujjain, Mandsaur, *Neemuch* and not according to the quality. The *malvi* cotton is good in staple but the ginning percentage is very low.

Gwalior.]

Mr. NARAYAN DAS.

[Continued.]

I have dealings in both qualities. I have got a factory at Nimbahera. Nimbahera is a medium staple cotton and it is nearly *Oomras*. Once I shipped it to Liverpool and it was sold as *Oomra* cotton. It was sold before the war at about $3\frac{1}{2}$ d. a pound but I do not remember the exact price. I have a pressing factory at Mandsaur which presses two kinds of cotton. One is *Neemuch* and the other is *Nimlahera malvi*. The former is grown in half the Mandsaur district on the north side while the latter portion grows the *Nimlahera (malvi)* cotton. *Neemuch* cotton is also a medium staple cotton. The cotton grown in Mandsaur is *malvi* cotton. I have also a ginning factory at Jaora where I mostly live. I press *malvi* cotton there.

6049. I have some figures here of average yield. The figures that I shall give first are obtained from Jaora, and relate to *malvi* cotton. Last year the yield per acre was 38 lbs. of ginned cotton. The average for last five years is 45 lbs. and that for ten years is 43 lbs. This year we expect six lbs. per acre. Now as to Mandsaur taking last year's figures we sowed 85,000 acres both with long and short-staple. 65,000 acres were under long-staple cotton and 20,000 acres were under short-staple cotton. I cannot give you the exact figures of yield as in case of Jaora but I can give you the figures for pressing. Of the yield from the 65,000 acres, I pressed 8,000 bales; of the medium staple cotton that was grown on the 20,000 acres 13,000 bales were pressed at *Neemuch*. There are two *tehsils*, Nimbahera and Dungla. The total area under cotton is 13,581 acres and the total yield about 27,00,000 lbs. ginned-cotton. The average yield is about 200 lbs. per acre which is five times as great as that of Mandsaur Jaora long-staple cotton. The weight of the bales is 400 lbs. and the size is ten cubic feet ($49 \times 17 \times 19$). I first erected a ginning factory at Nimbahera in 1898 and in that year twenty thousand maunds of *kapas* were ginned. Last year I ginned 90,000 maunds of *kapas*. As I have got the only factory at Nimbahera and practically the monopoly of that place, I can give you accurate figures of the production of that district. I am quite sure that all that cotton came from that district. The production of Nimbahera could not be exported unginned. An export duty would be charged on all cotton exported and so we could get that figure and find out the field. The ginning percentage of *malvi* cotton is 11 to 11½ lbs. of lint to 40 lbs. of *kapas*, that is 27½ per cent. For *Mewari* cotton it is 13 to 15 lbs. of lint to 40 lbs. of *kapas*, i.e., 32½ to 37½ per cent. The shorter the staple, the greater the ginning percentage; the longer the staple the less the ginning percentage. The long and short-staple cotton is all mixed in the field.

6050. There are some fields in the Udaipur State where exotic cotton is grown but in a very little quantity. So the cultivators do not care about it because owing to the small quantity the buyers do not pay a higher price for it. The cultivators of the district chiefly look to the ginning percentage and not to the superiority of the cotton. Two or three years ago I brought the matter to the notice of the Hon'ble Mr. Colvin, who was then the Agent to the Governor General in Rajputana and told him that there were opportunities for exotic cottons to be grown in the Mewar district.

6051. I think there is a future for good cotton. But cotton will have to be selected and kept separate and a buying agency will have to be formed. I am quite willing to pay a higher price for better staple cotton if it paid me to do so. In a commercial way, we always try to obtain a profit. That is human nature. If long-staple cotton fetched a higher price, I would also give the cultivators a better price. But in my opinion, at the present *malvi* cotton will not beat the short staple an account of the high ginning percentage of the latter and there is not sufficient difference in price in Bombay. Fine Akola fetches nearly the same price as pure Ujjain cotton. The price of Akola cotton to-day is only Rs. 30 lower than Broach cotton per *khandi*. This difference is not sufficient tempting to induce the cultivators to leave their present cotton with its higher percentage cotton and to grow Ujjain cotton. If you were to pay double the difference, i.e., Rs. 60 still the cultivators will benefit on the present yields. Varieties of long-staple cotton which can give high ginning percentage must be introduced and then the difficulty will be solved.

6052. Surat and Broach cotton have never been grown here. Last year some Cambodia seeds were given out in the Mandsaur district but the results are not hopeful.

6053. There is disadvantage in the trade names of our cottons. If our cotton were classified and sold regularly under its proper name it would obtain better prices. For instance, *Neemuch* and *Nimlahera* produce cotton which is better than Bengals and is equal to *Oomras* but in Bombay it is getting Rs. 40 to Rs. 50 less per *khandi* than Akola cotton. This is on account of the name and not on account of the quality of the cotton. Last year it happened that some merchants in Bombay purchased one lot of our *Neemuch* cotton and when it was surveyed, it was classed as equal to Akola, but if it had been sold as *Neemuch* it would not have obtained the proper price. I should like a proper classification made in Bombay. I have not suggested this to the Bombay Cotton Trade Association but last year I found that our difficulties were increasing when a press in the neighbouring State of Udaipur, which deals with only Bengal cotton, began to pour in their cotton here by booking it to *Neemuch* and *Nimbahera* and again re-booking it to Bombay and thus tried to spoil our name. Then I suggested to the railway authorities that such transactions should be stopped and that the good name of *Neemuch* and *Nimbahera* should not suffer. But the railway people did nothing. I did not get a written reply but they verbally promised that they would consider the matter, but that they were not authorised to detain cotton. It would not pay us to book our cottons to Akola to fetch a higher price, as the distance is so great that it would not pay. *Neemuch* and *Nimbahera* are situated in the middle of both short staple and long-staple districts.

6054. (Mr. Wadia.) I do not think that the figures relating to production in the forecasts are correct.

6055. The cotton from Bhilwara in Udaipur which is booked to *Neemuch* comes in full pressed bales and is re-booked to Bombay to get the price of our cotton. The State should prohibit this. The bales are not always marked by the pressing companies. I consider that it would be a good thing if pressing factories were compelled to stamp their names on the bales before they leave the factory. The names should be stamped on the flat sides. If they were stamped on the top, they would not remain. The railways should be instructed to stop booking fully pressed bales from one station to another where there are no mills. I cannot understand why fully pressed bales should come from Bhilwara to *Neemuch*, unless it is to cheat the merchants and purchasers by rebooking the cotton from a superior station. So, in my opinion, the best thing to do is to have the name of the press stamped compulsorily on the bale by law. The Railway Department would have to notify the stations where there were mills.

6056. As to damping, in some presses water is put on the cotton but not to a great extent. It is chiefly put in harsh cotton. The colour of the staple cotton is not good and if water is poured on it, it will make it worse. *Malvi* cotton is not so good as Akola in colour. *Neemuch* cotton is good in colour and it is nearly equal to Akola cotton. Last year it was passed as Akola cotton and only Rs. 2 per *khandi* was deducted.

6057. I have seen saw ginned cotton once in Bombay. A sample was shown to me by Messrs. Marshall and Sons. I was told that it was *Khandesh* cotton. The cotton was better than that of our gins. The staple was not cut and it was cleaner than roller ginned cotton.

Indore.]

Mr. NOOR MOHAMMAD SOMJEE.

6058. The freight to Bombay from *Neemuch* is Rs. 1-1 per maund for fully pressed bales. That is very high. The freight has been reduced for grain and other commodities but not on cotton. We want a reduction in the freight of cotton as has been made in the case of other commodities.

6059. I suggest that Cummin's press be introduced, because it is a very useful press. It can press a bale of seven cubic feet, without spoiling the quality. The bale is much smaller than that turned out by the Nasmyth Wilson Press. When shipping to Liverpool we pay less for bales pressed by Cummin's press. 100 bales pressed by the Cummin's press measure seventeen to eighteen cubic tons whereas 100 bales pressed by the Nasmyth press measure 26 to 28 tons. This difference is very important when it comes to the question of freight. I strongly advocate the introduction of Cummin's press in India. Where freights are based on the dimensions of the bales, the smaller bales make a great difference in the cost of freight under the high rates prevailing as at present. The charges for hoops and gunnies are also reduced. Cummin's press turns out seventy bales an hour against thirty bales per hour for Nasmyth's. I do not know whether the shipping lines have increased the freight on bales pressed by Cummin's press as compared with those pressed by Nasmyth's. But even so Cummin's press is preferable as the railways will require fewer waggons.

ANNEXURE I.

Letter to the Traffic Superintendent, Bombay, Baroda and Central India Railway, Ajmer.

I write to say that the cotton at Bhilwara, Barl and Kapasin is Bengal short-staple while the same at Nimbahera and Mandsaur is long staple, and for this reason it is held superior to that.

It is heard that the merchants at the stations book their full pressed bales first to Nimbahera and thence to Bombay in order that their cotton may be taken as superior and equal to *Nimlahera* cotton, and such bales do not bear any mark either of said places, if they do so it is a fair fraud. In addition to this it leads to unnecessary trouble to railway at this time of restriction and while the *Nimbahera* cotton pressed bales remain unbooked for a long time; therefore would you be good enough to stop this sort of business totally, so that no loss may incur to the cotton merchant at Nimbahera, and oblige?

ANNEXURE II.

Proposed draft to be advertised in papers. Important information to cotton purchasers in Bombay.

The cotton at Bhilwara, Barl and Kapasin is Bengal short-staple while the same at Nimbahera is long-staple superior to that and nearly equal to Akola fine.

Recently merchants continue to book their inferior cotton to *Nimlahera* without bearing any railway mark or with mark of Bhilwara, etc., and from Nimbahera they rebook it to Colaba for sale bearing railway mark of Nimbahera. The sole object of their doing so is that their cotton may sell at Bombay as *Nimbahera* cotton obtaining higher price.

The cogent distinction between Bhilwara and Nimbahera bales is as follows:—

- (1) The Bhilwara bale has twelve bindings and *Nimlahera* bales has fourteen bindings.
- (2) The *Nimbahera* bales have their factory monogram written or sealed on their flat side.

XII.—Indore.

Mr. NOOR MOHAMMAD SOMJEE, Office Manager, Indore Malwar United Mills, Ltd., Indore.

EXAMINED AT INDORE, NOVEMBER 23RD, 1917.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

6060. (1 and 10) Experience.—Before entering upon an explanation of the various points set forth by the Indian Cotton Committee in connection with the Indian cotton problem which has these days engrossed the attention of the Government as well as of the commercial world, I must introduce myself as one who has been stationed at Indore in charge of the Indore Malwa United Mills for the last eleven years. In my capacity as Manager of the above mills, I have had opportunities of purchasing cotton for the feed of the mill in my charge every cotton season in very large quantities and also all the year round in comparatively smaller quantities. This brought me into close contact with agriculturists and especially with those that cultivate cotton, yet having had very few opportunities of observation with regard to the agricultural processes and operations, progress of crops, proportion of area under cotton cultivation, etc., to those under grain cultivation, my explanation will show total absence of mathematical calculations and thus is likely to make an impression as being more superficial than scientific, but I believe it will not fail to give a general idea of how cotton cultivation is carried on in this part of the country.

6061. (2 and 11) Varieties.—To turn to the main subject, the market of Indore to which specially my purchases are restricted never brought to my view, during my experience of eleven years, more varieties of cotton than two, i.e., *Nimari* and *malvi*. *Nimari* cotton is generally grown in the District of Nimar of the Indore State, from which it derives its name. This *Nimari* cotton growing tract lies southward of Indore extending along the valley of the Narbada. It is a cotton of short-staple and much lint giving better ginning percentage than long-staple cotton and is useful for spinning lower counts ranging from 10s. to 12s. *Malvi* cotton is a cotton of long-staple with lower ginning percentage than *Nimari* cotton and is useful for spinning higher counts—say up to 20s.

6062. Deterioration of *malvi* cotton.—Although the above two varieties yet retain their names by which they have been known from the beginning, their qualities seem to change year by year and, in the case of *malvi* cotton, marked deterioration in quality is observed and it is feared that in course of time *malvi* cotton will be considered as traditional. The above deterioration in quality is, I believe, mainly due to (1) mixture of seed of higher quality of cotton with that of the lower quality, (2) absence of desire in cultivators to select of particular sort of seed for sowing, (3) cultivators' ignorance of places where good seed is obtainable,

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[Continued.]

(4) propensity of cultivators to adhere to old processes of cultivation and to customs handed down from father to son, (5) encumbered state of cultivators, (7) lack of manuring or non-manuring of fields, (8) disinclination to prosper by means entailing harder labour and necessitating departure from established ways.

(2) *Nimari* cotton which has to be used as of necessity in the absence of an alternative sufficient quantity of *malvi* not being available—can well be annihilated by the introduction of e.g., good exotic plants or seed. The soil of Nimar and I may say of Malwa also in quite capable of producing better crops with better seed. All sorts of exotic cotton can flourish there admirably and not only the cultivators but the manufacturers also will be greatly benefited by the displacement of the short staple cotton and will consider it as a real boon.

6063. *Effect of replacement of short-staple cotton by long-staple.*—If it were possible to replace all short-staple cotton of India by long-staple cotton, the effect on the cotton market generally would be what all manufacturers are expectant of. They will hail the day that will show such a change. All buyers are prepared to render whatever help be needed of them in the direction of improvement of cotton cultivation.

6064. *Suggestions for improvement of malvi cotton.*—As for *malvi* cotton, attempts are required to be made for improving its cultivation by counteracting the causes enumerated above. In the first place, it must be remembered that under the state to which circumstances have reached at this period it will be next to impossible to procure *malvi* cotton seed on a large scale from ginneries or from elsewhere. For improvement of cultivation of this sort of cotton, therefore, pure seed of it must be sought for in such places of *malvi* cotton growing tracts as are quite remote from any railway station or from big cities or ginneries (as in such places only there is a possibility of obtaining unmixed seed) and at sowing season some responsible officer or officers may be stationed there to supervise the operations. They may also be required to be present at ginning operations of this cotton and to take possession of the seed immediately after paying the owner of it adequate value for it. Next year, the same procedure should be adopted so that in course of years best seed will be available for sowing all over the State. However, if this be thought to be a measure entailing a long period or if it be supposed to be impracticable, the best measure would be to supply at the sowing season good seed of exotic cotton to cultivators, destroying all previous seed or getting it sold as fodder for cattle. This will have to be repeated every year as otherwise the same seed grown in the same area for several years is likely to deteriorate the stuff in quality. If this measure were adopted, many of the other causes enumerated above will not need employment of other means for their total extinction. Of course, the propensity of cultivators to adhere to their old processes and customs will not find any counter-measure in this, they will have therefore to be made to relinquish it by persuasion.

6065 (5 and 14) *Rotations and manures.*—Many of the cultivators do not think of manuring their fields, some, of course, do manure them with manure prepared by heaping in some remote corner of their homesteads cow dung and refuse of fodder mixed with urine and allowing it to rot there for a year or two. But others turn the cow dung into cakes and make money by selling them. The refuse of fodder is used by them either for warming themselves or for making fire for cooking purposes and they thus ultimately find themselves devoid of means of manuring their fields.

6066. (7 and 15) *Conditions affecting increase in area.*—Areas under cotton cultivation always fluctuate. Such fluctuations are due to the cultivators' prediction of prospective increase or decrease of demand for cotton in any year. If any year the cultivator finds by experience or hearsay that the demand for cotton will be less he will not in that year grow cotton but sow food grain in his holding and *vice versa*. A further cause to which such fluctuation in area can be attributed is impulses of cultivator in making choice of crops to be raised in his holding in any year. If one cultivator grows cotton in any one year in his holding may be impelled to grow in the same holding some other thing in another year. It may therefore be remembered that, even though good seed be imported and improved methods of cultivation be introduced, these impulses will still act as factors in effecting fluctuations.

(2) I have already stated before that the soil of Malwa and Nimar is quite capable of producing crop of any sort of cotton whether indigenous or exotic and the climate of this part of the country will also conduce to its growth. Any contemplated increase of area under cotton cultivation is, under the above circumstances, quite possible. It must, however, be borne in mind that any attempt towards increasing such area under cotton cultivation should not be allowed to interfere in any way with the cultivation of food grain crops as otherwise the results would be hazardous rather than salutary.

(3) To increase the area under cotton cultivation, therefore, attempts should be directed towards cultivation of lands lying fallow for years on account of pecuniary inability of tenants and of lands arable in every way but lying waste for want of cultivators. If export in large quantities of food grain were stopped, lands under grain cultivation can also be spared for cultivation of cotton without any detriment to food grain supply.

6067. (8 and 18) *Uses of seed and seed selection.*—Cottonseed is generally used as fodder for cattle, as well as for sowing. Oil is occasionally extracted from it and it is said that it has a very cooling effect on the brain if applied to the head.

6068. *Exotic cotton.*—No exotic cotton is at present growing in this part of the country. Sometime ago certain cultivators of Nimar attempted to grow American cotton in their fields with very good results yet after three years or so it became as coarse as the kind of cotton generally grown in that district is.

6069. *Condition of cotton.*—Raw cotton when it reaches factories is very dirty so that before using it it has to be cleaned by means of openers specially set up in every factory for the purpose. This seems to be unavoidable, unless of course expert supervision is arranged for at the time of picking cotton or unless the cultivator feels the necessity of picking it before it falls down to the ground. But it has been observed that for want of labour he is not able to arrange for picking it while it is yet in the pod. He has to postpone the operation for a long time and then the cotton in the pod having lost its moisture by the heat of the sun to whom it is exposed, falls down and is dirtied by coming in contact with dust. The cultivator cannot help it and therefore he is not to blame in that respect.

II.—COMMERCIAL ASPECT.

6070. (30) *Local trade customs.*—Now as regards the local trade customs, they are very simple here at Indore. No agency is employed in purchasing cotton nor are any advances made. Of course, future buying is carried on to a certain extent but such buying is only oral. No money payment is made in the bargain. The cotton growers bring raw cotton loaded on their bullock carts and wait at a place in the market allotted by the Administration for the purpose for customers that are generally procured by brokers of whom there is a regular pest in the city. These brokers will go very early in the morning to the end of a road of the

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city where they expect raw cotton carts to enter the city and will follow them to the rendezvous. In this way, every broker takes under his control a certain number of carts every day and having assured himself that no more were arriving on that day, goes to the manager or proprietor of a mill or to some other purchaser with whom he has dealings and informs him that he has so many carts of raw cotton for sale and that he would settle the bargain at such and such a rate. After much discussion, the bargain is at last settled and the carts are sent by the broker to the factory or elsewhere as the case may be, and there the carts are weighed and unloaded and price of the cotton is paid up immediately.

6071. (31) *Standardization of commercial names.*—I do not think there is any necessity of making any alteration in the names of *malvi* and *Nimari* cotton as they are already too widely known to require any standardization. As regards exotics also American or Egyptian are names peculiar to the cottons produced in those countries. Any novelty in names therefore would in my opinion go to puzzle public instead of giving them an idea of the quality of cotton with the altered name.

IV.—MANUFACTURE.

(a) Ginning and pressing.

6072. (38) *Saw gins versus roller gins.*—In our mills we are using roller gins (Platt Brothers) and we have plenty of them. This sort of gin is preferred to saw gin as the latter compresses and injures seed and makes it incapable of sprouting. Besides this it does not clear the seed but leaves certain fibres still hanging about it. The laps produced are dirtied in the process of ginning with this sort of gin and they appear to change colour. These evils are not observed in roller gins.

6073. (40) *Factory labour.*—Labour is very scarce. There are three mills here every one of which is labouring under the same difficulty. Occasionally agents have to be deputed to different places to search for and secure if possible fresh drafts. Unskilled labour has become equally scarce. Any construction undertaken is delayed for months together for want of labour.

(b) Spinning and weaving.

6074. (43) *Counts spun and market for yarn or cloth.*—In our factory we spin 12s to 20s, occasionally we spin higher counts but for those we have to import long-staple cotton from Navsari, Kumpta, Madras Presidency, etc. All the production of our mill whether textile or twist finds market in several places, of India such as Punjab, Frontier Province, United Provinces, Bombay Presidency, Central Provinces, Nizam's Dominions, etc.

Mr. NOOR MUHAMMAD SOMJEE called and examined.

(Translation.)

6075. (President.) There are two kinds of cotton coming into this market, *Nimari* and *malvi*. I get them mostly in a mixed condition. I buy *kapas* as well as lint. The *kapas* is mixed. On tests the quality of *malvi* and *Nimari* is very much lower than it used to be when I came here years ago. The deterioration is more marked in *malvi* than in *Nimari*. It would suit us best to have nothing but *malvi*. In order to bring this about, I would suggest that the Darbar should select pure *malvi* plants, get the cotton from those plant ginned separately and the seed kept separately and afterwards distributed to the cultivators. The cultivators mostly buy mixed seed from the ginning factories. The Malwa mills do their own ginning. *Malvi* and *Nimari* are ginned separately but an inferior lot of *malvi* would be mixed with *Nimari*. The seed of *malvi* and *Nimari* are sown separately but mixed seed is sold as *Nimari*. Most of the seed from the ginning factories is bought by merchants who not only sell this year's seed to the cultivators, but also seed of the previous year which they mix with it. A few intelligent cultivators gin their own seed. I have forty gins working in my factory and I have another factory with 48 gins. Very few cultivators, say, about five per cent, ask for the seed of their cotton back.

6076. I have seen imported American cotton. There are a few fields in Nimar and Malwa in which there is American cotton. I have tried American cotton in my mills, and found it much better than *malvi*. It spins 24s warp. I would pay a higher price for it with pleasure if I could get it in any quantity. I would be willing to pay a premium of Rs. 100 to Rs. 150 per *khandi* of lint of 784 lbs.

6077. Owing to bad picking due to shortage of labour, cotton is dropped on the ground and earth and leaf gets into the *kapas*. Some merchants damp lint. I reduce the weight paid for according to the amount of damp in the cotton. But I do not cut down the price. The damping is done mostly in the presses by merchants. The practice is decreasing.

6078. (Mr. Wadia.) On my looms I can spin 20s to 26s yarn warp and weft. For 24s and 26s warp, I mostly used Cambodia and Navsari cotton. From the best *malvi*, I can spin 18s. warp and from *Nimari* 14s. warp.

6079. There is an export duty on cotton, six annas per maund both for *kapas* as well as for cotton in *boras* (half maund bales). In the case of fully pressed bales, it is nine to ten annas per bale. Owing to concessions from the Darbar, no import duty is levied on imported cotton, on mill machinery or stores imported from Bombay or England.

6080. I cannot suggest any measures by which the present system of mixing good and bad cotton could be stopped except by distributing selected seed. If this does not stop it, legislation is the only remedy. I could not refuse to take mixed cotton. The market is going up and if I refused I should have to shut up my mills. I am not in favour of licensing ginneries as a fee would be charged for licensing and I am a gin owner myself. It would not be possible to prevent mixing in the gins by licensing as most of the ginning factories do not know the difference between the different classes of cotton. If there were only one class of seed and one quality, there could be no mixing. The trouble is that the *malvi* cotton is poorer in colour or classification than *Nimari* although it has a longer-staple. I have to pay Rs. 70 to Rs. 80 more per *khandi* of lint for *malvi* cotton than for *Nimari*. There is not much difference in the price of *kapas*, as *Nimari* has got a higher ginning percentage than *malvi* and this counteracts the length of staple.

6081. (Mr. Hodgkinson.) The Japanese buy a little cotton through my clerks.

6082. (Mr. Hederson.) I can buy pure *malvi* and pure *Nimari* *kapas*. I have seen very few fields of American cotton and the total arrivals of American cotton in Indore are only two or three *khandis* in this market. It always gets a special price. I buy from cultivator as well as from merchants. In Ujjain, there is only one kind of cotton whereas here in Indore there are two kinds of cotton. The reason is that *Nimari* is grown

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nearer to Indore than it is to Ujjain and therefore Ujjain does get only one quality but the *Nimari* cotton comes here. I cannot say positively if American seed can be brought in this bazaar. They do not call it American seed but they call it *bani*. *Bani* has a different meaning in each district. I have not heard of *vilati bani* in this district. I have seen some cotton from Neemuch district which contained large seeds like American seeds. It is mixed *Mewari*. I can spin Broach about two counts higher than *malvi*.

Mr. J. W. NORRIS, Spinning Master and Mr. W. HARTLEY, Manager, Malwa United Mills, Indore.

EXAMINED AT INDORE, NOVEMBER 24, 1919.

Written Statement submitted by Mr. J. W. Norris.

6083. *Deterioration of the cotton.*—I can only say that the cotton we have been working the last year or two is not as good as it was when we first started the mill. It appears to me that different classes of cotton are mixed together, and baled up, caused by the ginning factories either mixing the cotton themselves or not keeping the seeds of cotton ginned, separate, and these seeds being sown again by the cultivator. In testing the strength of our cottons we get a big variation in pounds pulled, this showing that the cotton is not of uniform quality. In past years we did not get so much variation. We have had a lot of trouble with hard lumps coming in full pressed bales caused by pressing the cotton whilst wet.

Written Statement submitted by Mr. Walter Hartley.

6084. *Deterioration in Central India cotton.*—I have been engaged in the Malwa United Mills since 1909, as Inside Mills Manager and Weaving Master. In such capacity, I have not come into contact with either the cultivators or the dealers in cotton produced in Central India. This branch of business in connection with our cotton mills has been attended to by our Mr. Noorinohamad Somjee, Office Manager, who has from time to time purchased practically all the cotton required for consumption in our mills. My experience during the past nine years is that the local cotton, *malvi* and *Nimari*, has deteriorated every year in quality until the last crop was almost unworkable. The cause of this deterioration in *malvi* and *Nimari* has chiefly been caused by the cultivators using mixed seeds of higher and lower quality with the result that the plants in the field cross fertilize and the crop of cotton to-day is a mixture of various grades.

6085. *Remedies.*—It appears to me that the only remedy for the present state of affairs is to have all ginneries under State control with proper supervision. Cotton seed from best *malvi* and *Nimari* should only be issued to the cultivators by responsible officers appointed so that the crop would improve year by year instead of deteriorating, which has been the case of recent years. The counts spun in our mills from *Nimari* and *malvi* cotton are from 12s. to 20s. and if we could only obtain the former quality of *malvi* and *Nimari* cotton, the same would be quite suitable for our requirements in the manufacture of our class of goods both plain and fancy.

6086. *Factory labour.*—At present our mills are suffering on account of shortage of labour, but I am of opinion that such difficulties would disappear with the supply of suitable local cotton. Most of our work people are paid by piece work, so that with the working of better cotton throughout the various stages from card room to the loom our work people would become more contented and efficient, and therefore remain at their work for longer periods.

MESSRS. J. W. NORRIS and W. HARTLEY called and examined.

6087. *President.*—We have been here since the mills started in 1909. The cottons that we deal with here are *malvi* and *Nimari*. There has been a marked deterioration in the cotton during the last four years. We put in a statement showing the comparative tests. There were no variations before 1915.

6088. (Mr. Norris).—I attribute the deterioration to carelessness in the field and in the gins. The gins are not cleaned out and so the seed gets mixed and is resold to the cultivators. The biggest responsibility rests with the ginneries. I would suggest that different gins should have different cotton to gin, one gin should gin *Nimari* cotton, one *malvi* cotton and so on. Even in one ginning factory they could be ginned separately in cases in which there would not be enough cotton to work otherwise. It is separate ginning that is required. The cultivator will then get a better strain of seed. There are particular parts of the district from which we get a better grade of cotton than others. Kanod cotton is the best that can be had here. It is *malvi* cotton, the best I should say. I know of no special reason for that.

6089. (Mr. Hartley).—Probably the nature of the soil may give better results in that tract. There would used to be no mixture and no variation at all. But there was great variation last year even in Kanod.

6090. (Mr. Norris).—From our point of view for the class of work that we do in these mills, what we want is an uniform staple. The *malvi* staple is a very good staple, when it is pure *malvi*. In 1910, we used to spin 20s warp and 26s weft out of it but that is very difficult now. It is very hard to say what you can get out of it now. We have to put a lot of Bombay cotton in to get 18s out of it. The great thing is the variations.

6091. (Mr. Hartley).—That proves that the cotton is mixed now. For the requirements of the local mills and the classes of spinning and weaving that we do, the substitution all over of an even *malvi* would be quite as much as we would ask. So far as our class of goods goes *malvi* gives us all we want. If American were introduced we should have to alter our machinery. As spinners and weavers we are in favour of the policy of getting *malvi* back to the standard, it was eight years ago.

6092. (Mr. Wadia).—I would certainly recommend that certain ginneries should be set aside to gin particular classes of cotton. Legislation would, I suppose, be necessary to confine gins to one class of trade. Ginned seed is sold to the cultivator mixed. That is one of the chief difficulties of course if the Agricultural Department gave out pure seed that would meet the difficulty to some extent but State supervision and State control would be necessary. If the gins were licensed under approved proper supervision, that would improve matters.

6093. The Factory Act applies to this State, except as regards the working hours. We work from light to dark. We work about 10½ hours in the winter and 13½ in the long days.

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6094. It is quite usual to get the local cotton mixed with stones, pieces of the wooden roller steps, dirt, etc. We sometimes lose as much as 27 per cent. in the blow room. The average used to be about 14. Now it is as high as 15 to 27. That loss is caused by the ginning people putting in rubbish called "*kitty*" after ginning. *Kitty* is placed in the cotton to increase the weight. Our own loss when we gin cotton is as low as nine or say ten per cent. I think that all this kind of adulteration is deliberate on the part of ginneries. I would certainly make it a condition of licensing a ginnery that, if damping and adulteration were resorted to, the license would be liable to forfeiture. Damping is carried on to an extraordinary degree. I have seen hose pipes being turned on to unpressed bales (*boras*) for half an hour before they were sent to Bombay. I have also seen ginned cotton damped before pressing. The sample I produce shows how cotton has been damped. This was in Indore, in one of the local gins. *Kapas* is sometimes mixed with lint owing to its being thrown over the gins but we get that knocked out in the blow room. There is not very much unginned cotton, in the ginned cotton. The chief complaint is the mixture with sand, *kitty*, leaf and other things and also damping.

6095. (Mr. Hodgkinson.) (Mr. Norris).—If longer-staple cotton were used, we could increase production. We should be able to reduce the amount of twist put in the yarn and in consequence, production would be increased.

6096. (Mr. Hartley).—There is scarcity of labour in Indore. One cause of the shortage of labour is that if the cotton does not work satisfactorily through the different departments of the mill, the work people naturally become discouraged on account of the bad results from the bad cotton. The work in every department is mostly piece work and; if the cotton were working better, then we should have better average attendance. This applies to all departments. We do not attribute the shortage of labour to the existence of more mills. That was a temporary cause only. We have partially trained from five to ten thousand men over a period of eight or nine years. These go to the fields and come back year after year. If the *malvi* cotton was the same as it was seven or eight years ago, then we should have no more labour difficulties. Of course if I could get a cotton slightly shorter than *malvi* but quite regular, it would meet my purpose better than an unknown mixture. What we want is a uniform cotton.

6097. There is one suggestion I should like to make as regards the productive power of the soils in Central India. I have grown vegetables and roses at Indore. I find that the Indore soil, if it is treated with leaf mould or soot shows a marked improvement. The outturn of Indian cotton at present is only eighty lbs. per acre against 200 in America. This might be greatly increased. We have from our own mills sufficient leaf mould and soot to fertilise probably a few thousand acres. We are quite prepared to give it away. The leaf would come from the blow room dust. The effect would be excellent. I have also been over the fields for ten miles round here and I have noticed tons and tons of bones lying on the ground. If these could be crushed, the bone meal could be kept in the State and used as a manure. Bone manure is an excellent manure. I would prohibit the export of bones.

ANNEXURE.

Statement Showing Comparative Tests.

The Indore Malwa United Mills, Limited, Indore. Season 1916-17.

Lot No.	Loss.	Test.	Count.	Turns per inch.	Description.	Variation in test.
	per cent.	lbs.				lbs.
	23-13	51	19-70	20-12	N. Kurampur	28
	22-10	44	19-70	20-12	N. Kurampur	22
	20-12	46	19-70	20-12	N. Sondhwa	23
	16-0	42	19-90	20-12	N. Indore	22
	23-12	45	19-70	20-12	N. Anjhar.	24
	19-11	51	19-90	20-12	N. Dhamned	21
	20-15	32	19-70	20-12	N. Nimarni	25
	13-15	59	19-70	20-12	N. Ujjain	20
Malvi Ujjain	13-9	51	19-80	20-12	N. Ujjain Piplia	26
	15-13	33	19-90	20-12	M. Ujjain Shujalpur	

The Indore Malwa United Mills, Limited, Indore. Season 1914.

Lot No.	Loss.	Test.	Count.	Turns per inch.	Description.	REMARKS.
	per cent.	lbs.				
1 D.	11-14	59	19-90	20-12	N. Dhamana Gin.	15th Feb. 1914 <i>Nimari</i> .
17 D.	14-5	60	19-70	20-12	N. Anjhar Gin	
27 D.	13-15	60	19-70	20-12	N. Nimarni.	
29 D.	11-2	73	19-80	20-12	M. Ujjain Cotton	
30 D.	12-0	75	19-90	20-12	M. Kanode Gin	Malvi
32 D.	12-3	65	19-90	20-12	N. Hill Gin	
	12-6	58	19-70	..	N. Indore Gin.	
	15.	57	19-90	20-12	N. Manavar.	
87 D.	14-1	67	19-80	20-12	N. Dharampuri.	
89 D.	14-7	58	19-80	20-12	N. Talwada	

In this season variation in test was normal, i.e., 10 to 14 lbs. only and therefore not noted.

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Messrs. K. D. PURANIK and H. BOLTON.

Mr. K. D. PURANIK, Manager, and Mr. H. BOLTON, Spinning Master, Hukamchand Mills, Indore.

EXAMINED AT INDORE, NOVEMBER 24TH, 1917.

Written statement submitted by Mr. K. D. Puranik, Manager, Hukamchand Mills, Limited, Indore.

IV.—MANUFACTURE.

(b) Spinning and Weaving.

6098. (43) **Counts spun and market for yarn or cloth.**—The principal counts spun from the local *malvi* and *Nimari* cotton are from 10s. to 20s. warp and 12s. to 16s. weft. 20s. warp is spun from Kanod cotton. We generally do not use any other cotton than *malvi* and *Nimari*. Our principal markets are local, Bombay, Ahmadabad and Cawnpore.

6099. (44) **Condition of cotton.**—The condition in which cotton reaches the factory is highly objectionable as the *Nimari* cotton is generally very dirty owing to its being full of cotton leaves and dust. *Malvi* cotton is received in a comparatively fair condition but in the case of both the *malvi* and *Nimari* cotton the suicidal practice of mixing the higher quality with the lower with a view to obtain an average price for the better quality makes the average quality very poor.

(2) The remedy against this practice is, until there is anything like an organization in cotton growing and cotton ginning, that the spinners should gin their own cotton at their own factories and should manage to get their cotton ginned at the different centres from which they receive their supply by keeping their own men there for making a selection and supervising the ginning.

(3) As almost all the cultivators are illiterate, it is impossible to do anything for improving the quality of cotton by means of issuing bulletins and tracts. The best way would be to make arrangements for starting an experimental farm in each district and after full trial as to which variety would be suitable for a particular district, the selected seed should be supplied to the cultivators at cost price and they should be encouraged to grow that variety by a remission of a portion of the land revenue for a certain number of years, say, five years, the greatest care being taken in the selection of men who could be trusted to put their heart into the work.

MESSRS. K. D. PURANIK AND H. BOLTON called and examined.

6100. **President (Mr. Bolton).**—The varieties of cotton that we get here are *Nimari* and *malvi*. From the short experience I have had of about two years I find they are deteriorating very rapidly.

6101. (Mr. Puranik.)—I have been in this district for more than five years and I have also noticed the deterioration.

6102. (Mr. Bolton.)—The cotton is dirty and we cannot get the same tests. We used to get much less percentage of blow room loss than we do now. We get much leaf and sand in the cotton. I would suggest that the mills should do their own ginning. It would be then kept under better control. I think that the adulteration and mixing takes place in the gineries.

6103. (Mr. Puranik.)—I think the mixing is more due to the indiscreet use of seed. The seed is not selected and the crop is mixed in the field and comes mixed to the ginnery. We give the cultivators seed and they say they will use it for their cattle but they sow it in order to make more money. If the spinners did their own ginning, they would have more control over it. I would suggest experimental farms in each district to provide seed.

6104. (Mr. Bolton.)—I agree with Mr. Puranik. The best *malvi* that we get comes from Kanod. It is the only cotton that we can use for 20s. warp and up to 26s. weft. It is scarcely good enough for anything above 20s. It is a bit soft. That is the best cotton that we get locally. The *malvi* from Dhar is the second best. That gives about 60 lbs. test. There is some mixing even of Kanod cotton but I get it fairly even. Whether all the cotton coming from Kanod is really grown there, I cannot say. Taken all round Kanod is of fairly uniform staple. The loss in the blow room of Kanod was at first about twelve to fourteen per cent., now it is eighteen to twenty per cent. So that Kanod is also deteriorating. We get a lot of damped cotton. We get cart loads of it. All the sides of the bales have to be thrown away. There is deliberate watering of bales after pressing. The ginneries are not very careful about different kinds of cotton. You will see a heap here and a heap there and the wind blowing and scattering them all about. In addition to ginning by spinners, I would suggest control over outside gineries: I would suggest a travelling supervisor, a Government official, and lay down the various conditions under which licenses might be held. I would suggest legislation.

6105. (Mr. Wadia.)—When I started, I spun with *malvi* from Kanod, 20s. warp, 24s. reeling and 26s. weft. I have always been able to give satisfaction as far as strength and every thing else was concerned with Kanod cotton.

6106. (Mr. Puranik.)—The varieties of *malvi* coming from the Ujjain State are not uniform. These are different classes of *malvi*. Because this cotton happens to come from Ujjain, it is all called *malvi*. We spin it to 16s. warp.

6107. (Mr. Bolton.)—I have been here since the erection of the mill was completed eighteen months ago. In the last eighteen months there has been great deterioration both in purity and staple. We cannot do the same tests as we used to do. We get damped cotton so hard that we cannot put it through the opener as it would break the spikes.

6108. (Mr. Puranik.)—Bales are not placed under cover and it is on account of the exposure to rain that the sides get so hard. I do not think there is artificial damping by the ginneries. We get a lot of leaf mould and stones coming in our bales. We also get a lot of corn pods. The loss in the blow room in the case of *Nimari* cotton this month was 24 per cent. but up to the spindle point it was 35 per cent. On a sample at the beginning of this year it was much less, about eighteen per cent. *Nimari* cotton being an early crop, it is allowed to stand in the fields for a longer time than is really necessary as the cultivators are engaged in sowing wheat and other winter crops and they pick up the cotton only when it falls to the ground and is mixed with earth. The dirt in the cotton is due to that. Last year the rains extended on to October. They knocked the cotton down and it was picked up with leaf on it. In my opinion, had the cotton been picked out straight from the boll instead of from the ground, there would not have been so much loss in the blow room.

Indore.]

Rai Bahadur Sir HUKAMCHAND SARUPCHAND.

6109. (Mr. Henderson.)—The price of Kanod last year varied from Rs. 130 to Rs. 150 per *bhoja* of four maunds, i.e., 320 lbs. In November 1916, the price was Rs. 145 for Kanod. The price of Kanod per *bhoja* of four maunds is about Rs. 10 above *malvi*. *Malvi* is about Rs. 15 to 20 more than *Nimari*. This is for lint. As for *kapas*, the *Nimari kapas* is sold at about Rs. 5 less than *malvi* per *mani* of six maunds or 404 lbs. Kanod *kapas* is Rs. 5 higher than *malvi* and Rs. 10 more than *Nimari*. The ginning percentage is about one-third. I cannot give separate percentages for the different cottons.

Rai Bahadur Sir HUKAMCHAND SARUPCHAND, Proprietor, Hukamchand Mills, Indore.

EXAMINED AT INDORE, NOVEMBER 24TH, 1917.

Written statement.

II.—COMMERCIAL ASPECT.

6110. (30) **Local trade customs.**—Cultivators and traders bring cotton in carts for sale. All carts are registered in the Municipal *adda* and customers purchase from there. Traders only bring cleaned cotton. The carts of cleaned cotton also are registered in the Municipal *adda*. There is no system here of making advances. Cotton is also purchased on promises.

6111. (31) **Standardization of commercial names.**—Three grades of cotton come here. *Nimari* from the Nimar district, *Mewari* from Udaipur down to the district of Mandasaur and *malvi* from Rampura down to Dhar.

IV.—MANUFACTURE.

(b) Spinning and weaving.

6112. (43) **Counts spun and market for yarn or cloth.**—Local *Nimari* and *malvi* cottons spin from 10s. to 20s. counts warp and 12-26s. counts wefts. 20s. counts warp is spun from Kanod cotton. We generally use *malvi* and *Nimari* cottons. Our principal markets are local towns, Bombay, Ahmadabad and Cawnpore.

6113. (44) **Condition of cotton.**—There is nothing objectionable in the cotton we receive. As far as I can see there is no objection to the use of long staple cotton. The *Nimari* cotton is generally very dirty owing to its being full of cotton leaves and dust. *Malvi* cotton comes in a comparatively fair condition.

Rai Bahadur Sir HUKAMCHAND SARUPCHAND, called and examined.

(Translation.)

6114. (Mr. Wadia.) I do business in cotton as well as own a local mill here. Both cultivators and merchants bring cotton to my mill. Cultivators bring *kapas* but the merchants only bring lint. There is a municipal market here where all carts of *kapas* are emptied and sold. Carts of lint are also brought into the market and sold. There is no custom here under which money is advanced before the carts are actually delivered or weighed. Sometimes forward contracts are made.

6115. There are three kinds of cotton coming into this market, *Nimari*, which comes from the Nimar district, *Mewari*, which comes from Udaipur and the Mandasaur district and *malvi* which comes from Rampur to Dhar. There are good buying merchants here and therefore there is no necessity for opening a buying agency. *Malvi* and *Nimari* spin from 10s. to 20s. yarn. I do not buy any other class of cotton here. Sometimes we work with *malvi* and sometimes with *Nimari*. *Malvi* is better than *Nimari* and is a long-staple cotton. I generally spin 20s from *malvi*. In my opinion, *malvi* is nearly as long as Broach. *Mewari* and *Nimari* are shorter in staple than *malvi* and spin only 6s to 12s. There is nothing objectionable in the condition in which cotton reaches my factory.

6116. If long-staple cotton were grown in this district, I would gladly buy it for my mills. I would gladly give a higher price if I could get long-staple cotton, and I always give a higher price for it when I get it. I get separate carts in the market here of *malvi* and *Nimari* cotton. They are not mixed.

6117. I have 48 single roller gins in my mill and I therefore gin my own *kapas* when I buy it for my mill. *Malvi* ginned cotton which I purchase in the market comes in very good condition but *Nimari* is rather dirty due mostly to the presence of leaf in it, not of actual dirt.

6118. I do not think that the statement of my manager Mr. Puranik, that there is a suicidal policy of mixing higher qualities with lower with a view to get better prices is correct. In my opinion, not two per cent of the carts coming into the market contain mixed cotton.

6119. I would not ask the Darbar to compel the cultivators to grow long-staple cotton, but if, by giving selected seed, the Darbar could persuade the cultivators to grow long-staple cotton, I should prefer it. I consider that the best policy would be to start experimental farms for the instruction of the cultivators. I do not know what assessment the cultivators pay but if, in order to encourage to cultivators to grow long-staple cotton, some remission were granted, it would be a good thing.

6120. The total arrivals of cotton in this district are about fifty thousand bales in Indore of which the three mills themselves consumed about 27 thousand bales so that there are only about 20,000 to 23,000 bales available which can be sent to Bombay for sale. My brother is thinking of starting another mill in Indore. When that mill starts there will be hardly any bales available for export to Bombay. I import cotton from Surat, Broach and Kanod near Haldia but the Indore Malwa Mills import more long-staple cotton than I do. We are all short of cotton. I have a branch office in Ujjain also from which I import cotton for my mill here. There are no carts coming in at present.

Indore.]

Mr. A. SCORDOS.

Mr. A. SCORDOS, Agent, Messrs. Ralli Bros., Indore.

EXAMINED AT INDORE, NOVEMBER 24TH, 1917.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(a) "Deshi" short-staple cotton.

6121. (1) **Experience.**—I have been stationed in Indore for the last six years. I am not in direct touch with cultivators.

6122. (2) **Varieties.**—The varieties of short-staple cotton grown here are known as *Nimari* but each kind varies in staple and quality.

6123. (7) **Conditions affecting increase in area.**—The area under short staple cotton is yearly increasing. This is due to the mixing by buyers and in a great part to the indifference of the cultivator who does not buy selected seed for sowing.

6124. (8) **Uses of seed and seed selection.**—The seed is used for fodder but in normal times most of it is exported to the Punjab or goes for home export. As far as I know, no hand ginned seed is selected for sowing purposes.

(b) "Deshi" long staple cotton.

6125. (11) **Varieties.**—There is only one variety of long stapled cotton in this district and it is known as *malvi*.

6126. (16) **Suitability of existing varieties.**—I would not recommend any other superior type being introduced. I am of opinion that, if the *malvi* type of long-stapled cotton (which was being marketed pure some years ago) could be grown again, it would prove the best for this district.

6127. (28) **Importation of seed.**—I am not in favour of imported seed from America or Egypt. If the right Indian seed can be sown in particular soils it will prove that it is the most satisfactory.

II.—COMMERCIAL ASPECT.

6128. (30) **Local trade customs.**—The cotton is brought in the market for sale as under:—As *kapas* and as machine ginned. The *kapas* is brought in by the farmers for sale or by petty dealers who have previously bought from the farmers. The ginned cotton is generally bought up by local merchants and sent then to a bigger market for sale.

6129. (31) **Standardization of commercial names.**—The commercial names are (for this district's cotton) "Fully Good" to "Fine," "Fully Good" and "Good" and I consider them suitable.

III.—STATISTICAL.

6130. (33) **Improvement of cotton forecast.**—The forecast figures at present are nearly correct so far as the area sown is concerned, but the forecasts of outturns in quantity at times differ with the actual production.

6131. (34) **Improvement of other statistical information.**—I would point out that the fortnightly cotton press returns in their present form are very unsatisfactory, the figures received from Native States which are at present collected by the Bombay Chamber of Commerce being particularly unreliable. I would suggest therefore that all these figures should be taken over by the Department of Statistics, and I would recommend, in this connexion also, that a system of licensing of ginning and pressing factories should be instituted as I think that if this were done correct figures could be easily obtained. The system of licensing factories in the Native States might at a later date be introduced with good results. I would also suggest that the Department of Statistics should employ a staff of travelling auditors to collect the figures from presses, mills, railways, etc., and the figures thus collected would afford a valuable check on the fortnightly returns.

(2) I would also point out that the cotton crop forecasts might be ameliorated by drawing the estimate to a greater extent than is the case at present from non-official agencies, such as local merchants, mills, gins, presses, etc., and too much reliance should not be placed on the official reporting agency which is at present a revenue agency rather than an agricultural reporting agency.

6132. (35) **Publication of Liverpool and Bombay prices.**—I do not consider publication of Liverpool and Bombay prices at up-country markets necessary as these prices are already known through Bombay agents of up-country merchants.

Mr. A. SCORDOS called and examined.

6133. (President.) I simply deal with merchants. I buy ginned cotton: I buy very little *kapas*. I have been in Indore for six years. Only two grades of cotton come into Indore namely, *Nimari* and *malvi*. More *Nimari* comes in than *malvi*. *Nimari* does not come in in a very clean state; *malvi* comes in cleaner. The quality of *Nimari* is going down; the quality of *malvi* is practically the same but the staple is deteriorating. As to the best policy to be pursued, I think it would be best to stick to the old *malvi* type and try to get it back as pure as it was about ten years ago. I have not seen any American cotton in this State. I have seen a little Cambodia.

6134. There is not much damping or deliberate adulteration of cotton. It is much less than it used to be years ago. I have not noticed any deliberate watering or adulteration in the ginning factories. It occurs mostly in the presses and is a great deal less than it used to be.

6135. As to the accuracy of forecasts, as far as the area goes, they are practically correct but the outturns vary tremendously. We make very elaborate forecasts ourselves which differ considerably from those made by Government. We write to every sub-agent, who questions all the farmers and *patels* coming into the market as to the condition of the crop and makes up his estimate accordingly. We go on the rupee basis and when we have worked it out in bales, we get the actuals. We fix our normals every five years. Either Government has not sufficient staff to get their forecasts made accurately or else they do not avail themselves

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Mr. ABDUL HUSSAIN MANJI.

of the information which is equally available to them as to us. The *tahsildars* ought really to be able to know much better about the crop than we do. The area is fairly accurate.

6136. I only see the press returns in the Indian Trade Journal. They are usually blank for Native States. The trouble about them is that they are not sent complete because their submission is more or less voluntary. It would be much better if they were made compulsory. We make up our own returns daily or every two or three days. We get the information direct from the gins and they give it us willingly. Wherever there is a pool or a combine, it is very easy to get information. I am not prepared to express a definite opinion in regard to the licensing of ginneries.

6137. I think the present classification, "fully good" "fine" and "superfine," is suitable for this tract.

6138. (Mr. Hodgkinson.) Much cotton is stored in the open or in sheds, open on the sides. Properly constructed sheds would mean greater expense to the merchants.

6139. (Mr. Henderson.) The two qualities of cotton, *Nimari* and *malvi*, both go down to Bombay under the same name. In Bombay, these cottons are known as Indore short-staple and Indore long-staple. *Malvi* is long-staple and *Nimari* short-staple. They are not bought in Bombay until they actually come into the market. There is no forward buying. It is only a spot market. Both *malvi* and *Nimari* are under *Oomras*. They are absolutely different but they come under *Oomras*. Indore cotton is the same as Ujjain and the quotation for it is Rs. 20 under Broach. Indore when available is quoted separately. *Malvi* cotton is a little better than Berar but not so good as Broach. There is not sufficient justification for giving it a separate classification. If enough were available, it would be an advantage to give it a separate classification.

6140. (Mr. Roberts.) We buy ready-ginned cotton mostly; we cannot touch *kapas*. The difference in price between fully good and fine is from Rs. 10 to Rs. 20 per *khandi*. The difference between *malvi* and *Nimari* of the same class would be about Rs. 20 per *khandi* of 784 lbs. of lint. *Malvi kapas* is all taken up by the mills. The mills have their own gins and so can afford to pay a higher price for it; they pay what they pay for Broach or even more. The ginning percentage of *malvi* is less than that of *Nimari*, but the mills pay a premium for it. The difference depends on the season. The ginning percentage of *malvi* works out at 27 to 28 and that of *Nimari* at 33 or 34. We buy very little *malvi* as the mills use it all or it is stored or speculated in. *Malvi* has been deteriorating for the last two years. Indore *malvi* is classified below Ujjain *malvi* in Bombay. Kanod is about the same. I quite agree that the standardization of the varieties of cotton would be a very important step. It would be much easier to give proper prices if cotton were standardised. At present my difficulty is that I do not know to what extent the staple of staple cotton is pure or mixed, even the staple that comes from certain districts. The staple of the cotton from Dhar and Kanod is deteriorating. If there was one kind of *malvi* or one kind of *Nimari*, it would help the trade tremendously. Six or seven years ago in Sanawad there was a beautiful cotton. It used to be sold on type. We cannot get that cotton now. Even *Nimari* has deteriorated tremendously both in class and in staple. This year it will be worse than ever. The seed last year was particularly bad. They say that the *kapas* is very bad this year. I have not seen any American cotton in this market.

Mr. ABDUL HUSSAIN MANJI, Manager, R. G. Hussain Ginning Factory, Indore.

EXAMINED AT INDORE, NOVEMBER 24TH, 1917.

Written statement.

II.—COMMERCIAL ASPECT.

6141. (30) **Local trade customs.**—Ordinarily the cultivators carry the raw cotton to the nearest ginning factory. If they cannot get good prices there, they take the raw cotton carts to the distant cotton market; and sell the same through brokers. In the *mofussil*, in some cases, *banias* make advances to cultivators on condition of getting delivery of certain quantities of raw cotton at rates previously agreed upon. In some cases also, forward contracts of purchase at rates previously agreed are made without any advance. These *banias* get the raw cotton ginned in the nearest factory and send it on to their agents to some central cotton market.

6142. (31) **Standardization of commercial names.**—There are two chief kinds of cotton in these parts, the *malvi* and *Nimari*. The sub-varieties under each are many though the difference in quality in each kind is not very appreciable. The varieties of cotton in Malwa and Nimar are suitable for local needs. Better quality of cotton would be only necessary if mill owners want to turn out finer yarn or for export trade. But there is enough market in India for cotton now produced. At present the mill owners have more than enough market for short-staple stuff. *Malvi* and *Nimari* are the standard names of the two main varieties.

III.—STATISTICAL.

6143. (35) **Publication of Liverpool and Bombay prices.**—It will be of great use to the public as well as to the cotton merchants if the Bombay and Liverpool daily cotton rates are published in up-country places.

IV.—MANUFACTURE.

(a) Ginning and pressing.

6144. (36) **Type and number of gins and presses.**—In our factory, there are twenty roller gins of Plat Brothers. We have got one Hodget and another Nasmyth Press, the size of our box in Nasmyth is 4' x 1½' and in the other press it is a little smaller.

6145. (40) **Factory labour.**—Great difficulty now-a-days is felt in obtaining labour.

6146. (41) **Conditions of cotton.**—The carts of raw cotton come to our factory covered. But there is some quantity of leaf and dust. In order to prevent this, the picking and collecting operations must be improved.

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Mr. C. M. SAMEL BECHER.

V.—GENERAL.

6147. (46) **Attitude of buyers to improved cottons.**—Buyers have not so far encouraged the growth of improved cotton by offering premium. But even by receiving premium, the agriculturists in the present state of agriculture would not perhaps find it profitable to undertake the cultivation of long-staple cotton except in canal areas; the process of water-lifting is very crude and costly. The concentrated manures are not in this country. The cultivators cannot get a decent margin of profit by growing long-staple cotton. Further there is the soil difficulty. American or Egyptian cotton grown on Nimar soil might be an absolute failure. The first step should be to try *malvi* cotton in Nimar and Broach and other superior varieties in Malwa. If the experiment is found successful then after some time it may be possible to introduce Egyptian or American seed. Irrigation in these parts is very defective and the agriculturist is idle and unintelligent. Agricultural labour also is very poor. Under the circumstances, there are insuperable difficulties in introducing improved varieties of cotton.

Mr. ABDUL HUSSAIN MANJI called and examined.

(Translation.)

6148. (Mr. Wadia.) I have got a ginning factory of twenty single gins at Siagunj near the Railway Station. The gins are all Platt's single roller gins. I can tell from what districts the various kinds of *kapas* brought to the ginning factory come. Only two kinds of *kapas* are brought to my factory—*Nimari* and *malvi*. About ten-sixteenths of the crop comes in a pure state and the rest in a mixed condition. In the remaining six annas of *malvi*, there is a mixture of *Nimari*. When I get pure *malvi*, I gin it separately but it all depends on the merchants. If they wish the *kapas* be ginned in a mixed condition I gin it accordingly and if they bring pure *kapas* and wish it ginned separately, I comply with their request. The majority of the merchants want their *kapas* ginned in a mixed condition.

6149. I have also got a press in my ginning factory. Some merchants sometimes damp their cotton deliberately in my factory compound before pressing but this happens only in a few cases. They use my hose pipe for damping purposes. I do not charge for it. After the cotton is ginned and slightly damped, it is passed through the cotton opener and then it is pressed. So I do not think the merchants get much advantage of weight by damping but the damping is done to remove the harsh feel of the cotton. If the cotton is not damped, it cannot be pressed in bales of more than 308 lbs. approximately. Most of the watering is done in the month of May when the weather is very dry. There are no godowns in my compound where I could store ginned cotton which is packed in *boras* (loose bags). The *boras* lying out in the compound often absorb the moisture caused by heavy dew in the winter months.

6150. The merchants do not adulterate the cotton with any sand or dirt but cotton is so badly picked, that there is dirt in it from the fields. Some of the merchants to get clean cotton pass the cotton through the opener three or four times but do not succeed in getting the dirt out. This year the crop was damaged owing to heavy rain.

6151. I mostly gin cotton on account of the merchants but sometime I buy *kapas* on my own account, gin and press 100 to 200 bales and sell it in Bombay or here if the market is favourable.

6152. There is a ginning pool in this district. Ginning charges at present are Rs. 3 per *mani* of six maunds. Last year the pressing charges were Rs. 5-4, but owing to the dearth of hoops and gineries this year they will be Rs. 5-8. I have to pay a contribution of Rs. 1-1 to the ginning pool. The contribution to the pressing pool is, I think, also about Rs. 1-10 but I cannot say exactly. I am a member of the pool. The bulk of the accounts of the pool are carried on by clerks and there is very seldom a meeting of the members. The pool accounts are settled every month. The share of the pool is divided according to the number of gins in each factory. There are four ginning factories in Indore not counting the gins that are in the spinning mills. The number of factories that are worked in based on the estimate of the crop. If the crop is a good one, all the four factories work but if the crop is not a good one only two factories work.

6153. This year the price of ginned cotton is Rs. 165 per *bhoja* of four maunds for delivery in the month of *Fagan*. That is for *malvi* cotton. The price for *Nimari* cotton on that basis would be from Rs. 142 to 145 per *bhoja* of four maunds. The price 165, I said was for pure *malvi* cotton but if *Nimari* is mixed with *malvi* cotton. I should see a sample, estimate the extent to which it was mixed and reduce the price according to the percentage of mixture.

6154. I certainly think that the local mills would pay a premium if better and long-staple cotton could be grown in this district as these mills have now to go to the expense of importing cotton from Nander and Broach at much higher prices and pay the railway freight here.

XIII—Baroda.

Mr. C. M. SAMEL BECHER, Shri Sayaji Mills Co., Ltd., Baroda.

EXAMINED AT NAVSARI, FEBRUARY 13TH, 1919.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

6155. (2) **Varieties.**—As, in our district, there is only one sort of cotton, which is neither long nor short-staple, I have given my notes in general with regard to the questions. In the Baroda District, the *kanvi*, *rozi* and *goghari* sorts of cotton are generally produced. As stated above, they are little longer than Khandesh and Bengal and a little shorter than actual Broach. These also vary little in staple and class as, for instance, the *kanvi* is the best, *goghari* the second and *rozi* the third, but *rozi* seems to be disappearing as the outturn of cotton is less than the other two. *Goghari* seems to be more appreciated as it gives a better yield than *kanvi*.

Baroda.]

Mr. C. M. SAMEL BECHER.

[Continued.]

6156. (3) **Area under cotton.**—Almost all the land is now kept for cotton sowing. Only very little is kept for food-stuffs, meant for home consumption, but that too is rapidly disappearing because it pays them more and the labour required for cotton is considerably less.

6157. (4) **Yields and profits.**—The yield per acre of *goghari* is about eight maunds and *kanvi* six maunds. Thus it appears that in a short-staple the yield per acre is greater than the longer. The net profit comes to about fifty per cent.

6158. (5) **Rotations and manures.**—Generally cotton is sown every year but some fields are kept barren (*vasel*) for one year in order to get better yield.

6159. (7) **Uses of seed and seed selection.**—The seed is partly used for cattle-feeding and partly for export. In selection of seeds, I find that the tendency of the cultivator is to select the best seed but owing to mixing in the gins there is every chance of getting a mixed seed.

6160. **Trials of exotic cotton.**—The exotic cotton was tried by some cultivators, but it did not grow well and also it gave less ginning percentage owing to the seed being too big.

6161. **Methods of picking.**—The mode of picking is undoubtedly very faulty. Ripe and unripe bolls are picked together and in some cases even leaves are picked which deteriorates the quality.

6162. **Mixing and watering.**—The mixing and watering of different cottons even without any regard to their staple is mostly done by the merchants. The cultivators in rare cases mix up the different sorts of *kapas* if grown mixed up together in the fields.

II.—COMMERCIAL ASPECT.

6163. (30) **Local trade customs.**—Buying is generally done by cotton merchants directly from the cultivators. In rare cases only, they buy *kapas* in advance from the cultivators at a cheap rate which they call *jalap*, but as the condition of the cultivators is improving, the system is rapidly disappearing.

6164. **Suggestions for the prevention of mixing.**—In order to avoid mixing, I think a system of travelling gins should be adopted as, for instance, say, gins may be kept in different plots of one thousand acres each where generally the quality is the same and then removed to another plot. There would be some difficulty in this system as there are numerous small holders of land, but if they work on a co-operative system, this difficulty can be overcome. This will also be to the interest of the cultivators as they can get a better class and hence a better price.

(2) The Government should keep a strict watch over gins and presses to check the watering and mixing of cotton.

(3) The Government can also restrict railing of cotton from one district to another and thereby check the mixing of long and short-stapled cotton.

(4) In gradation and classification of the cotton, with due regard to their staple, colour, etc., the proper gradation and classification system, as in America, should be adopted.

6165. **General suggestions.**—I do not think it advisable to impose upon the cultivator to sow long-stapled cotton in lieu of the short. It is quite natural that, if it be actually proved that the long stapled cotton will pay better, he will prefer it.

(2) I do not also think it advisable that more land should be appropriated to cotton at the expense of food-stuffs because, as it has already happened in our district, the cultivation of food-stuffs is greatly imperilled and hence the prices of food-stuffs have gone abnormally high.

(3) In Indian mills generally, the long-stapled cotton like American is very rarely used, and hence their requirements can be easily satisfied by the present condition, if more care in picking, classifying and checking of mixing is exercised, which will be advantageous both to the producer as well as to the consumer.

(4) Vague speculation should be strictly checked and some substantial system of paying deposits as in America should be adopted.

Mr. SAMEL BECHER called and examined.

6166. (President.) There are 14,720 spindles in my mills. *Kanvi*, *rozi* and *goghari* are all medium-staple. *Rozi* and *kanvi* can be easily distinguished but there is very little difference between *goghari* and *kanvi*. We can spin *kanvi* up to 24s. *Goghari* up to about 20s to 22s and *rozi* only upto 20s. *Rozi* is a harsher cotton though the staple is better than that of *kanvi*. *Goghari* is taking its place.

6167. The cultivators prefer *goghari* to *kanvi* on account of its higher ginning percentage. I have got some experience of the cultivator as I have some *inam* villages where cotton is grown and I think he is careful about seed. I am a gin owner myself and I find that the cultivators come and ask for particular seed and pay higher prices for it. Sometimes they ask us to take precautions to see that the seed of their cotton is not mixed, but is kept separate and we do our best to do that. This means some trouble and it is possible that, owing to carelessness on the part of our labourers, it may get mixed. The gins contribute a good deal to the mixing of cotton. There is watering of *kapas* in the presses but not in ginning. Of course the cultivators occasionally bring in damp *kapas*. Sometimes it is damped intentionally to get a better weight. To ensure less mixing and purity of seed, the best thing would be for Government to distribute better kinds of seed from their seed farms. I am in favour of seed farms. I am in favour of a system of travelling gins because then the cotton would be ginned on the spot and cultivators would get back his seed straight away. It might be possible to do that by co-operation though there are so many petty landholders that it might perhaps be difficult. Although I am not strictly speaking a ginner myself, I have a ginney attached to my mill. There must be some restriction on gineries. Speaking as a ginner, I would not object to mild legislation but I do not want it to be very strict. I am strongly of opinion that cotton cultivation should not increase at the expense of foodstuffs.

6168. I do not use any long-staple American cotton. We spin up to 40s. from Navsari. We import cotton from Navsari to Baroda.

6169. (Mr. Hodgkinson.) The difference in the blow room loss of *kanvi* and *rozi* is about seven to ten per cent. *Rozi* is dirtier. The blow room loss of *kanvi* is about twelve to fifteen per cent. That of *rozi* is from seventeen to twenty per cent. *Goghari* is a shade cleaner than *kanvi*. There is a lot of *goghari* in *kanvi*. It is very difficult to discriminate between the two. It is difficult to mix *rozi* and *kanvi* but they used formerly to be mixed. *Rozi* is fast dying out.

6170. The method of picking in the field is undoubtedly faulty. Cotton is picked with bits of leaf which makes the class very dirty. The staple of unripe bolls is shorter and the colour is very yellowish and when mixed with ordinary cotton in the gin it spoils the whole class. The pickers should be trained. That would

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be to the advantage of the cultivators as they would get a better price. Sometimes there is only one picking and sometimes two. There used to be two pickings for *rozi*. The second picking was better than the first. There would not be much difference between two pickings of the same class of *kapas* and, if they were ginned together, there would be very little to complain about.

6171. As regards the damping of *kapas*, most of the moisture comes out in the ginning factories. It does not deteriorate the spinning qualities of the cotton to any great extent. Generally before *kapas* is ginned it is opened out and dried in the sun. That takes away a great deal of moisture. Damping does not affect the colour unless the cotton has been kept damp for a long time. I have never seen a hose-pipe used in a press myself but I have heard that it is used.

6172. There are certain difficulties in the way of travelling gins but they could be overcome. They would be advantageous to the cultivators who have to bring their *kapas* into the towns and to sell it to some of the merchants at a lower price than it is worth. Now if the gins were there, it would be very easy for them; they would get their own cotton ginned and the merchants would prefer to buy that cotton as it would not be mixed. The gins would be worked by some sort of portable engine. I have read that something of the kind exists in America. The gins may have been electrically driven.

6173. (Mr. Roberts.) *Rozi* has practically disappeared. There is very little of it. It is not even five per cent of the crop in the Baroda State. The cotton grown in Kanam district is known as *kanvi*.

6174. The blow room loss of Navsari cotton depends on the particular quality. I think it is from seven to ten per cent. The total loss in Navsari cotton up to the spinning point is twelve to fifteen per cent. The total loss in *goghari* up to the spinning point would be about seventeen to twenty per cent. It is a clean cotton but with shorter fibre. I have not used long staple cotton from other parts of India except a little Cambodia which we use for mixing with Navsari. We have a warp from Cambodia and Navsari mixed.

6175. (President.) We send ginning and pressing returns. We send them on printed post cards direct to Bombay. I think they are sent to the Director of Agriculture, Poona.

Mr. JEDANGIR B. TAMBOLI, Ginning Factory-owner and Cotton Agent, Navsari.

EXAMINED AT NAVSARI, FEBRUARY 13TH, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(a) "Deshi" short-staple cotton.

6176. (1) **Experience.**—I have general experience of the East Khandesh district for about eleven years. I am in touch with cotton cultivators.

6177. (2) **Varieties.**—Now-a-days, N. R. (*roscum*) and Berar short-staple cotton are grown in place of *gaorani* long-staple cotton.

6178. (3) **Size of holdings.**—About seventy per cent of the land cultivated is under cotton cultivation.

6179. (4) **Yields and profits.**—The average yield per acre comes to about $4\frac{1}{2}$ (Bengal) maunds of raw cotton. The average profit per acre comes to about Rs. 74. The yield per acre varies as various sorts of soil are utilized in growing raw cotton; also much depends upon manure.

6180. (5) **Rotations and manures.**—Some sow cotton and *bajra* every alternate year, but now a days, high rates induce many to sow cotton every year. Cattle refuse is used as manure.

6181. (6) **Comparative returns.**—The cultivator gets Rs. 15 to Rs. 20 per acre more in the average by cultivating short staple cotton in comparison with the return from *deshi* long-staple cotton, other *deshi* crops, and exotic cotton. Because long-staple cotton (*gaorani*) is now extinct as the crop grows late, the yield is also less and there is every probability of damage by frost; hence short-staple cotton is preferred. The short-staple cotton crop is early, the average outturn is better and the percentage of lint cotton being also more, cultivators are led to prefer the short-staple. Exotic cotton is tried in very small plots of ground and the results are very discouraging.

6182. (7) **Conditions affecting increase in area.**—Short-staple cotton area fluctuates largely; the area increases with the high rates and decreases on account of late and scanty rains. Under the present circumstances, there is every likelihood of an increase in the area under *deshi* short-staple cotton, as the rates realized are such that even a six-anna crop will pay more than the full amount of any other crop growing in the same area.

6183. (8) **Uses of seed and seed selection.**—Cotton seeds are used for cattle food and oils and for sowing. Surplus seeds are taken by exporters to Europe, Kathiawar and the Punjab. Seeds of coarse short-staple cotton are selected. Seeds are purchased from cotton ginning factories, as hand gins are out of use.

6184. (9) **General economic conditions.**—Many districts that used to grow long-staple cotton are now encouraged to grow short-staple cotton, hence in the long run it is feared that the short-staple cotton will not pay so much as it does now; so Government should try to supply seed suitable to soils of the district, after experimenting for five or six years. Seeds of long-staple cotton, if found suitable to the soils and climate of East and West Khandesh, will be willingly used by the cultivators, if they got the same quantity of crop as they do now by growing short-staple cotton. Government seed depôts will be very useful, as various sorts of seeds will be supplied according to requirements. Government Farms can serve the purpose of supplying seed, so there is no need of a district staff. There being cotton markets in the chief towns of the districts, there is no need for buying agencies. Ginning factories in the districts are more than are required.

(b) "Deshi" long-staple cotton.

6185. (10) **Experience.**—I have been stationed in Navsari for about 22 years and in Surat district for about fifteen years. I do come in actual touch with cotton cultivators.

6186. (11) **Varieties.**—There is only one variety of long-staple cotton, generally known in Bombay and foreign markets as "Broach Fine"; it is also known in Bombay now-a-days as Navsari and Surat cotton.

6187. (12) **Size of holdings.**—About sixty per cent of land cultivated is under cotton cultivation

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6188. (13) **Yields and profits and comparative returns.**—The average yield per acre comes to about $2\frac{1}{2}$ (Surat) maunds of raw cotton. The average profit per acre is about Rs. 45.

(2) There was no *deshi* short-staple cotton formerly in these districts but after the introduction of hybrid seeds by the Government Agricultural Farm at Athva (Surat), and since a Cotton Syndicate for purchasing raw cotton from these seeds paid five per cent extra to the cultivators, and also because certain factory owners now pay Rs. 10 per *bhar* (24 Surat maunds) more, as the percentage of lint cotton in it is greater than that in the *deshi* long-staple cotton, there is every possibility of an increase in short-staple cotton.

(3) Egyptian cotton was experimented upon by the late Mr. J. N. Tata, but it did not pay well in comparison with *deshi* long-staple cotton.

6189. (14) **Rotations and manures.**—Some sow cotton and *jaur* every alternate year and many sow cotton every year. Cattle dung only is used as manure by a few of the cultivators.

6190. (15) **Conditions affecting increase in area.**—In my opinion, an increase in the area under *deshi* long-staple cotton in these districts will not be effected by any special conditions. Ginning factories are sufficient in number to meet the requirements of the season. Irrigation is not possible in these districts. Cotton rates being very high, the cultivators take every available piece of ground for cotton cultivation in preference to other food crops and they do not think it necessary to observe rotation of crops. Labour at present is sufficient to meet any increase. As for climatic conditions in the district north of the Tapi, the increase in area depends much upon the early heavy rains, but as far as Navsari and a part of the Surat districts are concerned, even the heavy rains have no effect upon the increase.

6191. (16) **Suitability of existing varieties.**—In Navsari district, the original *deshi* staple cotton should not be replaced by any other variety, as it is the best in India and is suitable to the soil and climate. In the Surat district, where short-staple cotton is now grown by some cultivators, the long-staple cotton should be replaced.

6192. (17) **Prevention of mixing of different varieties.**—Mixing of short-staple cotton should be stopped by an Act of Government. Merchants, ginning factory owners and cultivators should be made responsible for mixing the superior quality with inferior stuffs. If the Government cannot come in the way of growing shorter-staple cotton in these districts, the short-staple cotton may be allowed to grow, but the raw cotton should be ginned separately and the seeds should not be mixed with those of the long-staple cotton. His Exalted Highness the Nizam's Government has already taken steps to stop adulteration, to distribute suitable seeds and to increase the cultivation of long-staple cotton.

6193. (18) **Uses of seed and seed selection.**—Seeds are used for cattle feeding and sowing, also for oil by the local mill. They are mostly exported to Gujarat, Kathiawar, the Punjab and to Bombay for Europe. No special selection is being made in respect to seeds. The cultivators purchase seeds from factories for sowing. Hand gins are not used. The demand for seed for sowing is so increasing every year, that thousands of hand gins may be required to meet it.

6194. (19) **General economic conditions.**—It is advisable to have cotton markets in Navsari, Bardoli and Kim and, if necessary, in Surat, so that the cultivators may have the advantage of getting the best rates of the day. Selling through brokers, sometimes the real rates do not go into the pockets of the sellers, as the middlemen occasionally get the advantage of the rising market.

(2) The soil and climate are suitable for long-staple cotton, and if the Government were to introduce longer staple cotton, it should be introduced after a fair and successful trial of six or seven years. The seeds should be thoroughly acclimatised. In order to prevent deterioration, Government through the Athva Farm should try to provide the cultivators good seeds of the original long-staple cotton without the mixture of the short-stapled one.

(3) Buying agencies will never succeed. Six years ago, one Syndicate was formed in Bombay to purchase *kapas* from the seeds supplied by the Athva Government Farm at five per cent higher rate than that for the *deshi* long-staple cotton. In the middle of the next season, the said Syndicate had to give up purchasing raw cotton, as outturn of lint and quality did not come to their expectations. The growers of cotton from special seeds should be induced to give their *kapas* on their own account to Government and that *kapas* should be put to auction, that the real market rates may be realized. Such a step is also necessary for the Bhils of Navapur and Chinchpada of West Khandesh.

(4) Full pressed bales of cotton from Broach district and Anklesar are sent to the railway stations of Navsari and Surat, whence they are forwarded to Bombay with fresh railway receipts on the strength of which the bales are generally passed in Bombay as Navsari or Surat cotton. This sort of practice should be checked.

(5) *Kapas* for ginning and cotton for pressing from districts growing inferior quality are brought by railway and bullock carts for mixing with the superior quality of cotton of these districts. Such importation for mixing should be prohibited by an Act of Government. Exemption should be made for the requirements of local spinning and weaving mills.

(6) One standard weight for *kapas* and for cotton should be fixed by Government for the whole of the Bombay Presidency.

II.—COMMERCIAL ASPECT.

6195. (30) **Local trade customs.**—*Kapas* is sold by cultivators through brokers to factory-owners, who are generally cotton merchants, sometimes four or five months before the *kapas* is ready for picking. In forward contracts, 25 to 100 per cent are paid in advance on the date of the contract. In ready contracts, the value is paid on the delivery of *kapas*.

6196. (31) **Standardization of commercial names.**—There are no commercial names of various grades of cotton in these districts. It will be better to name *kapas* and cotton after the names of different districts. In northern Gujarat and Kathiawar, *kapas* and cotton are distinctly named.

6197. (33) **Buying agencies.**—There is no need of buying agencies in these districts as there are many local buyers to purchase cotton by paying better rates than those ruling in Bombay.

III.—STATISTICAL.

6198. (33) **Improvement of cotton forecast.**—Cotton forecasts published by Government are not sufficiently accurate. The help of an advisory committee of experienced persons, one from each *taluka* of the district, will be useful in framing the forecast. Cotton forecasts are of very little used to buyers and settlers on these sides, as the price generally fluctuate in sympathy with the American daily quotations, and those

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of Broach from Bombay. As the Bombay and Ahmadabad Mills purchase nearly all cotton in the Navsari and Surat districts, there is very little effect of the provincial forecast.

6199. (34) **Improvement of other statistical information.** Cotton press returns are always deficient. The factory owners should be compelled to furnish the Government every fortnight with the number of bales pressed; along with it the return of exports of cotton with their standardized names should be supplied, then only will statements be useful to the cotton trade.

6200. (35) **Publication of Liverpool and Bombay prices.** The daily publication of Liverpool and Bombay cotton prices in up-country markets will be of very little use to cultivators, as many of them are illiterate. Now-a-days, some persons of *taluka* towns and large villages associating together get daily quotations from Surat by telegrams and letters, so many of the cultivators do come in contact with the daily fluctuations in cotton. Speculation in cotton is carried on to such an extent that many merchants in *mofussil* districts receive rates by wire three or four times a day; hence Government publications of cotton prices once in morning or evening will be of very little or no use to the public.

IV.—MANUFACTURE.

(a) *Ginning and pressing.*

6201. (36) **Type and number of gins and presses.**—In the Navsari factory—(supervision only) there are twelve Platt Bros. double roller gins and ten Platt Bros. single roller gins, one hydraulic press of Messrs. J. H. Riley & Co., with two boxes and a revolving platform.

In Kim—(supervision only) 42 Platt Bros. single roller gins.

In Amalner—One factory of 44 single roller gins of which 43 of Messrs. Ardeshir D. Wadia & Co. and one of Stratton's Patent.

One factory of forty single rollers gins of Platt Bros. one hydraulic press of Messrs. D. Stewart & Co.

6202. (37) **Size of bales.**—In the size of bale is Navsari 47 in. x 19 in. x 24 in. For mill use only, 360 lb.

In Amalner 48 in. x 19 in. x 15 in. 400 lb.

6203. (38) **Saw gins versus roller gins.**—Saw gins are never used in Navsari and Surat district. In Kajgaon (East Khandesh) Messrs. Gaddum & Co. tried saw gins but cotton from these gins is not easily taken up by the Bombay merchants and mills, so they are not popular in the district.

6204. (39) **Effect of saw gins in Indian cotton.**—Cotton from saw gins is of unequal staple and neppy; so short-staple cotton from these gins is not preferred. While baling, it requires more pressure and about 30 to 40 lbs. less are pressed in a standard size bale. The gins are used for a special sort of *kapas* in western districts.

6205. (40) **Factory labour.**—In Navsari, for the last three or four years difficulty is left in obtaining labourers for factories, as the local labour is utilized by other factories in other districts where raw cotton arrives earlier. Rates are nearly doubled within six or seven years.

(2) In Kim, the cotton crop is very late and the season hardly lasts from two to three months. There is no local labour available, labour from other districts can be had with great difficulty at a very high rate. In the years of famine or scarcity, many Kathiawar labourers come to Gujarat for their maintenance, then only labourers can be easily obtained.

6206. (41) **Condition of cotton.**—In Navsari, there is no objection against raw cotton when arriving in factories; the picking of raw cotton is early in the morning, so a little moisture is observed while weighing, but there is no actual fraud.

(2) In Khandesh, on account of the scarcity of labour at the time of picking *kapas*, the *kapas* then gathered is leafy and full of dirt and sometimes it is purposely moistened with water by the merchants who purchase it from the cultivators.

6207. (42) **Effect of machinery of replacement of short-staple cotton by long-staple.**—Very little alteration in setting and seed grids is to be made in gins, if long-staple cotton were to be replaced by short-staple cotton.

V.—GENERAL.

6208. (46) **Attitude of buyers to improved cottons.**—From my experience, I can say that buyers of cotton are prepared to encourage the growth of improved cotton by offering high rates.

Mr. JEHANGIR TAMBOLI called and examined.

6209. (Mr. Wadia.) I am a cotton agent and a factory owner. I work for Messrs. Tata and Sons as well as for other mills. I work here as well as in Amalner in East Khandesh and in Surat. Only one kind of cotton used to be grown here before hybrid seed was introduced by the Government farm at Surat. There was only one kind of cotton and it was the long staple cotton known as Navsari. Navsari cotton is better than Surat or Broach. Navsari cotton used to be marketed in a pure state but now both Navsari and Surat cottons are mixed with short-staple. As cultivators used to get five per cent more for cotton grown from the selected seed supplied by the Agricultural Department, they are now led to grow short-staple cotton that fetches about Rs. 10 per *bhar* more than the *deshi* long-staple *kapas*.

6210. I would certainly advocate that the mixing of short-staple cotton with long-staple should be stopped by an Act of Government. It is for the Government to take action in the matter; they should not allow cotton to be mixed. Navsari cotton is the best in India but it is now being mixed and the quality is deteriorating. His Exalted Highness the Nizam's Government have taken steps to stop mixing.

6211. I would advocate the opening of cotton markets in Navsari, Bardoli and Kim so that the cultivators can get the best price of the day. Now-a-days brokers there are sent out to the villages and cultivators do not know what the price should be. It would be better for the cultivators as well as for the merchants if the cotton were marketed in an open market. The cultivators should be shown the advantages of the market as in Berar and Khandesh. The markets should be controlled by a market committee.

6212. Full pressed bales of cotton from Ankleswar and Broach districts are sent to Navsari and Surat whence they are rebooked to Bombay with fresh railway receipts and pass as Surat and Navsari cotton at Colaba. It would be a great advantage if the bales were stamped with the name of the press at which they were pressed. I have already stated in my written evidence that both *kapas* and cotton in *docras* and

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half pressed bales are brought from districts growing inferior qualities by railway and bullock carts in order to be mixed with the superior quality of cotton of these districts. Such importation for mixing should be prohibited by legislation but an exception should be made in the case of cotton required for the local spinning and weaving mills. I do not say that the Railway Companies should be forbidden to take *kapas* or cotton for transport but that the transport of cotton for the purpose of mixing should be prohibited. It would be simpler to prevent all transport of *kapas* by railway as well as by bullock carts. *Kapas* is brought in fifty or sixty miles to Navsari from Ankleswar and adjoining districts. Transport by cart of the *kapas* outside a district should, at any rate, be prohibited.

6213. There are four sorts of weights in the tract north of the Tapti river; in one district the *bhar* is 8½ cwt; in another district it is 8½ cwt; in another, 8 cwt 1 quarter 24 lbs. and in another, 8 cwt 2 quarters and 8 lbs. These four weights are sometimes used in the same village and it would be much better if there was but one standard weight only. I suggest that there should be one standard *bhar* of 8½ cwt for all districts.

6214. I have stated in my written evidence that saw gins are not used in the Navsari and Surat districts. In Kajgaon (East Khandesh), Messrs. Gaddum and Company tried them but the cotton is not readily taken up by the Bombay merchants, as the staple is uneven and the cotton is nappy. The cotton tried by Messrs. Gaddum and Company was short staple cotton of Khandesh variety.

6215. (President.) I do not consider the cotton forecasts accurate. In order to render them more accurate, advisory committees should be formed consisting of Government officials and people in the trade. The ginning and pressing returns are very incomplete and are useless at present. I would make the submission of an accurate statement compulsory. There is so much fluctuation in cotton prices and so much speculation in cotton, that the publication of daily prices would be of no use. Government would publish prices once a day only whereas the merchants get three or four telegrams.

6216. (Mr. Hadgkinson.) Formerly the length of the staple of Navsari cotton was 1½ inch but now it is about an inch. It has taken six or seven years to deteriorate to a little less than an inch.

6217. Saw gins have never been used for Navsari cotton. Navsari cotton is very soft and I think saw gins will tear the staple very badly. I would not recommend their use for Navsari cotton.

6218. (Mr. Roberts.) By hybrid cotton, I mean the cotton given out by the Agricultural Farm at Surat. I think it is a hybrid. It was not a very short-staple cotton, but it was not so fine as the old Navsari and Surat *deshi* cotton. I think that this hybrid has deteriorated and that is being mixed with the local cotton. I can see the deterioration from the *kapas* that is now available. Even *rozi* cotton is now seen here and it tends to deteriorate the local cotton.

6219. As to whether cultivators would be induced to bring their cotton to a central market if one were opened, I think they would do so in time. I would only suggest the establishment of markets in the bigger places where there are two or three factories.

6220. Cambodia was tried by the *patel* of one village near Kim. It was very coarse and did not succeed.

Mr. M. H. KANTAVALA, M.A., Agent, Maharaja Mills Co., Ltd., Baroda.

EXAMINED AT NAVSARI, FEBRUARY 13TH, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(a) "*Deshi*" short-staple cotton.

6221. (1) **Experience.**—I have been in Baroda City and districts for years, and know the agricultural surroundings, while my experience as a mill-owner has brought me in touch with many other cotton fields, particularly of Gujarat and Kathiawar.

6222. (2) **Varieties.**—The two varieties of *deshi* short-staple cotton grown round about Baroda are *rozi* and *kanvi*; both of them have a staple half an inch long. The former is a hard, tough and coarse fibre, the latter is softer and finer. Both of them are generally grown, just as other crops, without any special preparation.

6223. (3) **Size of holdings.**—The average size of holdings in Gujarat is very small, less than an acre.

6224. (4) **Yields and profits.**—The return to the farmers from this crop is in ordinary years ½ *bhar* per *bigha*, or say 240 lbs; and the yield from the *kapas* is about thirty per cent, the total gross earnings per *bigha* being Rs. 60. This leaves to the cultivator a fairly good return in ordinary years, though there is not much difference in this respect between the cotton crop of short-staple and cereals; but, in years of drought, cotton is a plant that holds out, and thus places the cultivator in a secure position. Sometimes the farmer grows cotton along with *tur* or other crops in the same field to insure against the vagaries of the monsoon. One at least of the two crops survives according as the rainfall is sufficient or deficient.

6225. (5) **Rotations and manures.**—In some cases cotton is grown every alternate year in the same field. The manure employed is the ordinary cow-dung.

6226. (7) **Conditions affecting increase in area.**—The area under cultivation of this short-staple cotton has not fluctuated much, particularly in rich soils, which can grow better crops like tobacco, oil seeds and vegetables; but recently the succession of years of deficient rainfall and higher prices of cotton have been instrumental in inducing the farmers to take to cotton, and this tendency has been reflected even in the case of the short-staple cotton. I do not think it is possible, and advisable even, to give a further impetus to this tendency, and for two reasons: (1) already enough land is under cultivation of short-staple cotton; perhaps the maximum is reached in Gujarat to the detriment of cereals and other crops, and (2) the rapid increase in the growth of short staple cotton is not desirable, because it means more and more admixture thereof with the better variety while ginning and further leads to the deterioration of the better class of seeds.

6227. (8) **Uses of seed and seed selection.**—The seeds of both *rozi* and *kanvi* are used as fodder for cattle; a very small percentage—almost negligible—being used for oil extraction. There is no selection of seeds for growing.

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[Continued.]

“(b) “Deshi” long-staple cotton.

6228. (11) **Varieties.**—The long-staple cotton grown round about Baroda is called Broach, and the other crops with which I am acquainted are the *talio* of Ahmedabad, the “Surat” and the *wagad* of Kathiawar. But I shall confine myself to this section to the Broach crop with which I am familiar, and refer to the other crops later on in their commercial aspect. The Broach is a cotton which is grown round about Broach, say from Baroda to Ankleswar, and is only a better variety of the *kanvi*. Its staple is about three-quarters of an inch.

6229. (15) **Conditions affecting increase in area.**—Much of what I have said above as regards the short-stapled cotton applies to Broach. But I believe Broach is grown almost every year in the same field, and every year more and more land is being placed under cultivation of this variety. Not only are the existing fields which grow cereals converted into cotton fields, but fresh waste land which is broken anew is requisitioned for cotton growing. Cotton grown on this fresh soil is of the finest Broach quality, and is used partly for admixture with Surat. I believe more than sufficient land is under cultivation of cotton in Gujarat. But it is possible to increase the area under *deshi* long-staple cotton, by a careful and judicious selection of seeds and fields. For instance, part of the area under the cultivation of the *kanvi* crops can grow Broach, if good seed is provided, and what is important, if care is taken to make the change only in those fields which have got a rich soil and are properly situated. Secondly, the soil which is newly brought under cultivation being fertile can easily grow a superior sort of cotton. Otherwise, I think, in Gujarat the right sort of cotton is grown in the right place, regard being had to the nature of the soil, the conditions of climate, and of rainfall, and also of labour.

6230. (17) **Prevention of mixing of different varieties.**—The mixing up of the different varieties of cotton mostly takes place in the ginning factory, sometimes in the press, and only rarely in the fields. The farmer generally grows only one variety, or at least keeps the varieties apart. The admixture, wherever it occurs in the field, is due to the mixing up of seed in the ginning factory, partly accidental, and partly owing to the greed of the ginning proprietor, who cares for a higher percentage of yield of lint cotton from seed cotton. Some owners of factories are known to mix up seeds with this intention. Even some of the Navsari factory-owners do this. But this practice is not common. The mixing of seeds is in most cases accidental. But the admixture of the two sorts of cotton while ginning is intentional, and for this the farmer is not responsible. So long as there are middlemen whose business it is to buy *kapas* or seed-cotton from the cultivators, to get it ginned, and to sell this lint cotton either in *boras*, half pressed bales or full pressed bales, we can never expect the desired purity of staple. Either the consumer must buy up *kapas*, or there must be a buying agency or, better still, the farmer himself must get his *kapas* ginned. As to the difficulties and advantages of this last proposition, I shall speak later on. But I believe Government must select seeds and provide them to the farmers; and as far as possible all seeds must be hand-ginned: and secondly Government must have a competent and expert staff to visit the ginning factories to prevent *kapas* and also the seeds being mixed up. Government must supervise all presses and prevent cotton being mixed up before pressing by interested merchants.

6231. **Methods of picking.**—The Government farms and experts must also teach the farmers in North Gujarat to pick the *kapas* properly. The practice just now is to take the whole pod out, and so a lot of leaf remains in the *kapas*. Proper picking, particularly of the *rozi* and *kanvi* varieties, is essential and would ultimately benefit the farmers. Not only should the leaf be left out while picking, but immature or yellowish bolls should be kept separate.

6232. **Handling of kapas.**—Then the farmers should be taught to handle the *kapas* properly. At present it is thrown in the fields and a lot of foreign material gets in, particularly dust. The ginners also should keep the *kapas* and cotton in proper condition. A lot of dust get into the ginned cotton after it is ginned. Sometimes the ginning plant is imperfect and too many seeds remain inside, while sometimes the merchants are allowed to throw seeds into the ginned cotton to increase weight.

6233. **Necessities for improvement in ginning.**—The systems of periodic ginning and of leasing out ginning factories on short leases and to the highest bidders, which prevail in Gujarat, do not induce the ginner-lessees, and the proprietors also to keep the machinery in proper order and to replenish worn out essential parts in proper time. The ginner also has interests quite different from those of the farmer. The ginner often happens to be a merchant, and if the farmer does not sell to him, but to some other merchants in the same factory, his *kapas* is improperly ginned. The combines of the various ginning factories and Presses further leave the cultivators at the mercies of other people.

(c) Exotic cotton.

6234. **General.**—Very little exotic cotton is grown in Gujarat. A little Cambodia was tried in irrigated lands, but it failed, because perhaps the soil or the climate did not suit.

II.—COMMERCIAL ASPECT.

6235. (30) **Local trade customs.**—The present practice is that the farmers cart their *kapas* to the neighbouring ginning factory, where the proprietor or some other middleman buys up the *kapas*. The middleman is a petty merchant who generally lives on this trade. Sometimes he advances money on *kapas* standing in the fields. He often buys some *kapas*, probably mixes with it a little inferior stuff, gets the bales half pressed and sells them to a bigger merchant or to the consumer. The bigger merchant gets the bales full pressed and sends them to Bombay, or sells them to the consumer. This is the local way to market the crop. The only advantage is that the farmer takes no risk of the market going down; but against this is the greater disadvantage that he has to sell his produce as soon as it is ready. He cannot hold out—does not hold out at all for a possible rise in the market. Even when the prices are lowest, he sells off his *kapas*. Moreover the farmer being not the person to get the *kapas* ginned, a lot of admixture takes place, and cotton gets deteriorated every year. But this system cannot be changed. The holdings are very small, and every individual farmer cannot wait to have his *kapas*, often of the size of three or four bales, ginned, nor would the factory proprietor care to gin such small quantities separately. It would be better if some buying agencies are started by respectable merchants or Government.

6236. (31) **Standardization of commercial names.**—Almost all cotton grown in Gujarat, other than *talio* which is consumed on the spot by the mills of Ahmedabad, is used to mix with Broach. The name Broach is merely a commercial name now. Both *rozi* and *kanvi* are mixed with Broach; sometimes the better sort and the better picked quality of *kanvi*, that for instance grown near Derol, is mixed up with Surat; while

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the better sort of *rozi* having a tough staple is mixed up with the *wagad* of Kathiawar. Under these circumstances, it would be much better if the words like *Broach* and *Dhollera* were altogether abolished, and if the different sorts were known by their individual names.

III.—STATISTICAL.

6237. (35) **Publication of Liverpool and Bombay prices.**—I don't think the publication of Bombay and Liverpool rates at cotton centres is necessary. In the first place such rates are always available at these places as soon as they are known in Bombay, and secondly the farmers also keep themselves informed of the day's rates. Moreover they are not in a position to hold out. It would be better, on the other hand, if in depressed times Government could finance the farmers and help them to hold out.

IV.—MANUFACTURE.

(b) Spinning and weaving.

6238. (43) **Counts spun and market for yarn or cloth.**—The counts spun in my mill are from 16's to 40's. Most of the yarn is used in making cloth, and that is 20's warp and 30's weft; while the surplus yarn for sale is either 16's, or 40's. The former is sold in the Bombay market, and the latter in the Madras Presidency.

6239. (44) **Condition of cotton.**—The condition in which cotton reaches the mills is certainly not satisfactory. Some of the defects due to indifferent picking, bad ginning, and adulteration have been pointed out above; while one more defect may be mentioned here *viz.*, excessive watering. All these defects can be remedied by Government supervision, or by demonstrative propaganda, or by penal laws. This last remedy is unsuited to India.

6240. **Long-staple versus short-staple cotton.**—The present quantity of large stapled cotton grown in India is only a small percentage of the total crop. Not only do the Lancashire mills want more and more of the stapled cotton, but the requirements of local mills in this respect are also increasing every year. It is certainly desirable to increase the area under its cultivation. But there are two considerations which must be borne in mind: the better variety of cotton requires a better soil, a better irrigation and a better knowledge of agriculture; and secondly, the yield of long stapled cotton per acre, is, I think, smaller than that of the short stapled, and though the increased price fetched may, to a certain extent, compensate the cultivator, it is a question whether the gross earnings per acre would be sufficient. I would rather suggest that in selected and irrigated soils new varieties of cotton may be tried, like the Punjab-American on the Tiruppur Cambodia.

V.—GENERAL.

6241. (46) **Attitude of buyers to improved cottons.**—Buyers of cotton are indifferent to the quality if they are not the consumers; and though they may pay a small premium for the improved variety, they don't encourage in any way the habit of growing an improved variety by paying a sufficient premium. On the other hand, the innovators happen to be so few that they cannot dictate their prices.

6242. (49) **Effect of tenure of land.**—As to land tenures, I can only suggest that if the holdings are big enough, the farmers can be their own merchants, and thus acquire an interest in the better marketing of their crops.

VI.—IRRIGATION.

6243. **General.**—There is practically no irrigation of the cotton crops in Gujarat, nor do the local varieties want any extra watering in ordinary years. In case of deficient rainfall, it would certainly be desirable to water the fields; how far this is possible in Gujarat, it is for experts to say. But I think the situation of Gujarat does not offer any facilities for any scheme of extensive irrigation, except by means of wells. The rivers of Gujarat have little water—and that too very deep after the rains cease. Wherever irrigation is possible, exotic varieties may be tried. But in the case of such foreign varieties, the farmers don't easily take to it. The reasons are: (1) The chances of failure. The Government should notify that in the event of a new variety failing, the Government would remit all their dues for the particular year. (2) The difficulty of marketing the small crop. The Government can inaugurate some agency to buy up such cotton wherever it is grown, otherwise the interested middlemen won't pay sufficient, while the farmers won't be able to take the *kapas* in small quantities to the consumers. (3) Inexperience and ignorance of farmers. This, of course, the Government Department of Agriculture can easily cope with.

Mr. M. H. KANTAVALA called and examined.

6244. (Mr. Hodykinson.) I am the agent of the Maharaja Mill Baroda. I took an M.A. degree in literature and then went into business. It is a spinning and a weaving mill with 12,000 spindles and 300 looms. We spin up to 20s warp and 30s weft. I used Surat, Dhollera (Kathiawar) and Hubli cotton for my cloth. Surat and Hubli cotton have deteriorated during the last few years. I believe the deterioration is due to bad seed and indifferent cultivation. The bad seed is some times due to intentional mixture by the proprietors of ginning factories when they give seed to the cultivators. I am afraid that is done even in Navsari. It is not entirely the fault of the ginner. The cultivators sometimes buy mixed seed and plant it without any selection. As between the cultivator and the ginner, the cultivator is not responsible for sowing mixed seed. The best thing to do to get over this difficulty is for the cultivator to select seed from the best plants and to gin it by handgins. Experts must go out into the fields to select the best bolls. I would not advocate rigid Government control of all seed distribution but there must at least be Government supervision.

6245. A lot of dust gets into the ginned cotton because it is thrown on the bare ground in the compound, and when it is taken up for pressing, the layer next to the ground contains a lot of dust. All the soil in Gujarat is alluvial so that it is easily mixed with the ginned cotton. To prevent this, bamboo leaf matting might be spread on the ground in the factories. I have found sand in cotton imported from America.

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6246. I find cotton coming in damped, especially in full pressed bales. Some damping is necessary for pressing and I think it improves cotton, if it is scientifically done but if it is excessive, the cotton gets spoiled. I have sometimes found a better staple in full pressed bales which have been slightly damped. We sometimes damp cotton in the mills in dry weather for mixing. I have not tested cotton for damp so that I do not know the percentage of moisture but we sometimes find layers of a pressed bale spoilt by damp. We were unable to separate it except with the help of the opener and we had to reject it. Loose seeds are sometimes found in bales.

6247. I have used ordinary Cambodia in my mill for spinning 40s. yarn reeling when mixed with Surat. I have never used it separately. Unless it is especially selected, I do not think we could get anything higher out of it, if we used it separately, at least not in the atmosphere of Gujarat. It might be possible in Bombay.

6248. Picking on the improved lines I have suggested in my written evidence is being carried out by the farmers themselves in certain places. The farmers are more interested in clean picking than the pickers who are merely hired labourers. The farmers want to get greater weight owing to the leaf sticking to the cotton. Unripe bolls are picked with ripe bolls. Round Surat the cotton is properly picked. There are at least two pickings.

6249. I would suggest that Punjab-American might be tried. If the soil is irrigated, it might prove suitable. There is a big water fall on the Narbada at Surpaneswar which might provide water for irrigating Punjab-American cotton. I think that Punjab-American is more likely to succeed in this tract than Egyptian cotton.

6250. (Mr. Roberts.) In my opinion, the cultivator is not primarily responsible for mixing because he gets mixed seed. Mixing of seed may be intentional on the part of the ginner but the cultivator does not exercise any scrupulous care in the matter.

6251. The leasing of ginneries for one, two or three years is fairly common in Gujarat. The lessee is responsible for putting the gins in order and the lessor takes the rent. The lease is settled before the season commences, say in July or August, and there should be plenty of time for putting the gins in order. Short leases are very objectionable as it is not to the interest of the lessee to put in proper knives and to replace the worn out parts. He prefers to go on with the gins as they are.

6252. I am in favour of the introduction of a market system and think that markets should be started in the bigger places where there are several ginneries. I have seen the central market in Akola and should like markets established here on the same lines. It will be advantageous to the cultivators. I do not think it would be very difficult to get the cultivators to bring their cotton into the central market.

6253. I would recommend standardization of weights if it could be arranged. At present the weight of the *bhar* varies considerably.

6254. (President.) The cotton forecasts are fairly accurate. I am not acquainted with the pressing and ginning returns.

6255. I am not in favour as a general principle of legislation to remedy defects. The masses are uneducated and legislation is not therefore desirable; it would not ultimately be to the advantage of the cultivators. If there were legislation, the ginneries would combine and fix higher rates than at present. I do not think that Government can interfere with rates. If there were legislation, the cultivators would not find it easy to get buyers for the poorer stuff. The high price of short-staple is due to adulteration. If that were stopped, the cultivators would suffer. It might be an advantage to the millowners but that is doubtful. What I mean is that laws of this kind are unsuited to the conditions of India at present.

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Mr. E. F. DAVUR, Manager, Aurangabad Mills, Aurangabad (Deccan).

EXAMINED AT RAICHUR, FEBRUARY 24TH, 1918.

Written statement.

II.—COMMERCIAL ASPECT.

6256. (30) Local trade customs.—At Aurangabad, as in all the most important cotton centres in the Nizam's Territories, a cotton market has been set up, and the *kapas* brought in by the ryots or by tradesmen from the surrounding villages is sold by open bidding and buyers and sellers are able to take full advantage of the effects of the Bombay market. The setting up of several ginning and pressing factories has not only given a great impetus to cotton cultivation but has also enabled the cotton growers to get the best possible price for their produce owing to the competition of buyers. The *kapas* or raw-cotton is brought to the market by two classes of sellers, (1) the cultivators themselves, or (2) petty tradesmen of all castes and creeds who go from village to village and buy the *kapas* in small lots from cultivators to resell it as a business affair in the cotton market. In a few cases, you come across a monied villager, having influence as a money lender among the cultivators, or the ordinary village *sahukar*, acquiring the produce delivered as a forward contract for advances made. But this class of sellers is not numerous in Aurangabad, and this system is not known to have any unfavourable effect on the advance of cotton cultivation. In fact, the system in vogue for marketing the cotton must be deemed to have been satisfactory and to have increased cotton cultivation by leaps and bounds in the past ten or twelve years on this side. At the cottonmarket, the *kapas* is sold to the buyers by *aratyas* on behalf of the sellers for a commission, and I have reason to believe that, on the whole, the *aratyas* work in the best interests of their clients, the more so as their number is fairly large and the competition of these *aratyas* among themselves for the commission business is always very keen. It is true that, in some instances, a seller's *aratya* is also the commission agent for a buyer from Bombay or any other place, but it does not therefore follow that in acting in the interests of the Bombay buyer he would act prejudicially to the interests of the *kapas* seller, for, if he did so, he knows that he would be bound to lose his client and his next door rival to gain him. On the contrary, some shrewd sellers of *kapas* prefer to

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entrust their interests to such an *aratya* for reasons of their own. There is not much of *larni* or forward contract business in *kapas* on the Aurangabad side, and I am of the opinion that cultivators, large and small, in the majority of cases, exercise their own free choice as to the time when they should dispose of their *kapas*. It is a crop they can speedily harvest and quickly convert into coin if they choose, and the various cotton markets and ginning factories accessible to them in different directions from their villages leave them ample scope for marketing their produce as they think best.

6257. (31) Standardization of commercial names.—There are two principal varieties of *kapas* brought into Aurangabad, called *saloo* and *barat*. The first variety probably is the indigenous growth mostly grown in the hilly parts round Aurangabad, and the other is either pure *barat* or a mixture of *barat* and *saloo*. The *barat* cotton has been introduced from Khandesh and Berar and probably within the last thirty years. The name *barat* (*Barhat*) may have been a corruption from the Mahrathi *Varhad* and *Varhadi* or the modern Berar and Berari. The *barat* is the shortest staple of Aurangabad and, really speaking, *roseum* cotton. The *saloo* is somewhat better in staple and at times so good that some people have passed it off as Parbhani and Nander by railing it to those places as a long staple cotton. It has been noticed since the past few years that a new variety of seed has found its way into these parts and got mixed up. When ginned, the lint comes clean off it, and reveals a quite black shell and not the woolly surface characteristic of all the other seed. The lint is a soft silky one with an average length of about $\frac{3}{4}$ th inch. Its proportion at present would appear to be about three or four per cent. Another variety observed in the Aurangabad cotton tract since about three years is a cotton that comes from some villages in the hilly country. It is an exotic seed of a long staple variety, sown in a tract covered by the villages of Babra, Nagapur and Pishor of the Kunnud Taluka. Three years ago only about five or six *pallas* of 600 or 700 seeds of *kapas* were seen in Aurangabad, while this season about 150 *pallas* (450 maunds) are reported to have been received. Some cultivators of that tract are reported to have introduced the seed from Khandesh. The Agricultural Department has been informed of this, and I would be glad to submit a sample, if required, for the inspection of the Indian Cotton Committee. My trials show a yield of about 36 per cent. of lint from the *kapas*. I have heard from the cultivators that this variety is grown side by side with their ordinary *kapas* and seems to grow satisfactorily. If the acreage yield can be proved to be as good as the ordinary, the Indian cultivator on the Aurangabad side ought to find this cotton a paying variety.

(2) Regarding the question of suitability of the three grades of cotton (1) *barat*, (2) mixed *barat* and (3) *saloo*, the answer is that I believe they are all suitable for the different needs of Indian mills, according as their spinning values go.

(3) I might suggest that the name *barat* may well be standardized for all short staple cottons in India, and the word *bani* for all long-staples as generic expressions, from whatever parts of the country the cotton may come. The classification of the different grades in the two species can be easily denoted by the current terms "Low," "Ordinary," "Good," "Middling," "Fair," etc., but the term "Fine" should be discarded.

III.—STATISTICAL.

6258. (33) Improvement of cotton forecast.—I believe the information as to the cotton forecast from the Nizam's Government is fairly accurate as far as circumstances go, and there are not likely to be any better media for collecting this information at the present stage of commercial progress and enlightenment in these parts than the *taluka* officials. Those engaged in the cotton trade in the Province are a class who have their own channels of information through their intercourse with villages and an intelligent interest in statistics of this nature has still to be created. There must be scope for improvement in ascertaining actual facts as to area sown and the condition of the crop from time to time, and also the greater punctuality and timeliness of the information. This is a subject which is sure to receive continued progressive attention from His Exalted Highness's enlightened Government, and I think there is no point in making suggestions which might suit the demand for them elsewhere.

6259. (34) Improvement of other statistical information.—Government would do well to publish for general information in the English language a return showing the cotton ginned and the cotton pressed in each *taluka* of the dominions and also of the cotton railed every station to various destinations in the shape of annual bulletins.

6260. (35) Publication of Liverpool and Bombay prices.—The cotton buyers at the various markets are always fully in touch with Bombay prices by post and telegraph all over the country, and this information is of importance to the sellers and buyers, as prices ruling here are affected by the rise and fall in Bombay prices. In some cases, merchants get weekly circulars from Bombay cotton agents, as Messrs. Prier de Soane & Co., or Breul & Co., which give a sort of weekly market report. If an authorized daily publication of the Bombay cotton prices at upcountry markets is made, it might have interest for those same people free of charge, as it were, but it is doubtful if the ryots and village tradesmen would profit by them. Perhaps the contrary might be the case. So far as I can judge, the time is not yet ripe for the institution of this reform. As to Liverpool prices, they would be of no use whatever.

IV.—MANUFACTURE.

(a) Ginning and pressing.

6261. (36) Type and number of gins and presses.—We have a department in our mills at Aurangabad for ginning our own *kapas* into cotton which is always used by ourselves, and is not intended for sale. We have no cotton press. We have 32 Platt's single roller double action Macarthy gins.

6262. (40) Factory labour.—The difficulty in obtaining factory labour at Aurangabad is increasing every day. Not only are we handicapped for labour employed all the year round, but also for labour employed in our ginnery from November to May, and at times up to June, which is a longer period than usual with seasonal ginning factories all over the district though we work the gins and the mills during daylight hours only.

6263. (41) Condition of cotton.—Though a mill buying *kapas* for its own consumption has opportunities of selecting suitable and satisfactory stuff in the market here, on the whole it would be idle to deny that there are objectionable features about the raw cotton brought to market, viz.:—

(1) The introduction of moisture in the *kapas* said to be done by keeping it on a wet or damp place for a period before carting it.

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- (2) The collection of good and bad qualities for small growers by the village tradesman and promiscuously mixing them up before marketing.
- (3) The mixing up of rain damaged *kapas* or *kapas* of the previous season by the grower or seller with the sound picking.
- (4) The tendency to shove in layers of the final picking concealed under the good stuff in the cart or in *dooras*.
- (5) The presence of excessive leaf and sand.

(2) Some of the practices are very harmful to a good and correct grading of the cotton, and at times rebound also to the disadvantage of the seller. The unwary purchaser is deceived more often than not by these tricks of the trade, but it is difficult to bring about any radical cure of these defects. Greater vigilance on the part of buyers in examining the raw cotton before accepting and penalizing these defects in the price paid might in course of time effect improvement. We do it at the Aurangabad Mills, and such sellers, as a rule, keep clear of the mill, and usually refrain from offering us any such stuff or passing it off fraudulently. A better supply of labour at the picking and a more rational system of picking the *kapas* as it gradually came to ripeness in the fields might tend to remedy defects.

6264. (42) **Effect on machinery of replacement of short staple cotton by long staple.**—The same class of gins are used for *barat* and *saloo* *kapas* in the Aurangabad district and there does not seem to be any likelihood of the necessity of any substantial alteration in our machines for ginning any Indian long staple *kapas*, as far as I am able to judge at present.

(b) *Spinning and weaving.*

6265. (44) **Condition of cotton.**—So far as we gin our own cotton, it is done by us to our satisfaction but the ginned cotton that we get for our long staple requirements mostly from Nander and partially from Kerkhelli is not so satisfactorily ginned. We buy our own *kapas* at those places and get it ginned at one particular factory in each place at the prevailing rate of charges for ginning. I call the ginning there not quite satisfactory, in so far as it is carelessly done and a quantity of crushed and uncrushed seed is allowed to pass into the lint. Also a good percentage of unginned *kapas* happens to drop into the cotton as it is delivered from the gins, resulting ultimately in about three or four per cent. higher blow room loss in such cotton than the more carefully ginned stuff. The simplest remedy for obviating this objectionable condition of the outside ginned cotton would be to set up our own ginning, if circumstances went in favour of our doing so. But it is a general evil and ginning factory owners should exert themselves to improve their working conditions. Probably the reasons why reform is retarded are:—

- (1) The incompetence at times of promoters of ginning factories.
- (2) The keenness to make things go anyhow, and a tendency to consider that it pays better to carry on with such unsatisfactory state of things, arising from the difficulty of having a good and well organized working staff of mechanics and supervisors.
- (3) The sordid consideration on the part of the ginning factory owner as well as the merchant that the introduction of crushed or uncrushed seed and *kapas* adds to the weight of the outturn. It may be remarked that, in some places, merchants have been known to collusively encourage the underlings for bringing this about.

6266. (45) **Effect on cotton market of replacement of short staple cotton by long staple.**—I must say I am not in a position to express an opinion as to what the effect would be on the cotton market generally if any large proportion of the short staple cotton at present grown in India were replaced by long staple cotton. But I may be permitted in my answer to make the following remarks. The demand for the long stapled cotton in the Nizam's Territory from all accounts is greater than the supply, the Indian mills are keen buyers, cotton cultivation is on the increase and the short staple is making inroads, and it is obviously going against the requirement of the cotton market, if this increase in cultivation in response to the demand is not made in long staple. All over India there is an abundance of the short staple, which is bound to be depreciated and in its wake, the coarser counts of Indian yarns too depreciated. The spread of waste preparing plants in India may also in course of time throw on the market a substitute for short staple cotton to make coarser counts from, and assist the tendency to cheapen the short staple. This depreciation in the market value of coarser counts is now noticeable, with the result that the finer counts prevailing in India are attaining a higher premium than used to be the case over the coarser ones, and therefore, the long stapled cottons too will be fetching a higher premium, but the mill-owners are entitled to expect at the same time that the cultivation of the long staples should be more and more improved, that there should be greater uniformity of staple in the growth, and everything possible should be done in the fields, from the sowing to the picking of properly ripened cotton, to attain to ideal conditions. Moreover, a smaller outturn of the long staple *kapas* per acre from the field, as against the short staple, is the most serious drawback but it is not on that account fair to the mill-owner to demand from him an impossible premium on the price, considering the price paid to him for the resulting higher counts of yarn. For this reason, the agricultural expert must come in and devote his energies to place at the cultivator's disposal a long staple cotton seed and method of cultivation for it to bring him a relatively higher yield per acre.

6267. **Long versus short staple cotton.**—Regarding the general question of long versus short staple cotton growing in the Aurangabad district, it may be remarked that the indigenous *saloo* variety is a softer and longer stapled cotton than the exotic *roseum* *barat*. But it is not as long in staple as the *bani* cotton now marketed at Nander or Parbhani. The question is "Will the *saloo* *kapas* of Aurangabad die out in course of time to be replaced by the *barat* variety?" The cultivators generally say that the soil is different from that of Khandesh and the *barat* seed repeatedly sown from each year's crop changes into a softer variety and after three or four years the intermixture in the *kapas* has a small proportion of the real *barat* and a larger proportion resembling the *saloo*. This is a matter for the study of the agricultural expert, who ought to be able to evolve some definite data by experiment. But many people believe that pure *barat* cannot thrive in Aurangabad and the *saloo* variety with the better staple has every chance of surviving, if a determined effort is made to keep up its cultivation with pure seed, especially in the hilly tracts. This season, the crop has been a failure down country, but on the hilly parts it has been a full crop and almost all the *kapas* received in the market has been *saloo*. The majority of the seed left for the next year's sowings will therefore be *saloo*. Again, Aurangabad has been sold at relatively very good prices in Bombay this season and has been in constant demand, and this may be due to some great extent to the present year's staple. Thus there is all the more reason for encouraging and improving the cultivation of *saloo* *kapas* as against the *barat*.

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[Continued.]

(2) Some cultivators at Nagapur and Pishor villages have introduced a real long stapled variety, which the Agricultural Department pronounces to be Cambodia. The attempt at growing it has not been methodically made. It is allowed to get mixed up with the *saloo*. It is a splendid cotton and a demand for it would be easily set up in Aurangabad. The Aurangabad Mills would be able to take it up. We have to bring Nander and Kerkhelli long staple from a distance and would readily take it up in their place if it could be had pure at same cost as those cottons. The cultivators say it grows as well as the *saloo*. We have, in the past, given the seed of this variety back to the cultivators. If the Agricultural Department will take up this variety and introduce more of this seed, perhaps they may find the acreage yield very encouraging. If the acreage is proved to be as good as that of the *kapas* the cultivators generally sow on this side, the success of the seed tried at Pishor would be assured, because the lint yield from this excellent long stapled variety is 36 per cent. while the lint yield of the Nander and Kerkhelli *bani* *kapas* is about 27 per cent. only.

(3) I may state for the information of the Cotton Committee that compared to Aurangabad district, Jalna district has a more important and larger cotton trade. Jalna cotton is similar to the Aurangabad *barat* and *saloo*. But the *barat* is the principal and increasing variety at Jalna, and the market there has given an impetus to it. The region through which the metre gauge line passes in a south easterly direction from Jalna, the valley of the Godavari, produced the famous *bani* cotton of the Nizam's Territory some fifteen or twenty years ago, but now the short staple has taken a footing there also. The *barat* seed has come to stay, and the real *bani*, if found at all at places like Sailu, Perbhani, and Purna, is difficult to get, while the history of the short staple ousting the long staple is repeating itself. Perhaps the black soil of that part of the country may acclimatize the *barat* differently from elsewhere. At present, at the extreme south east of this region, places like Nander, Mudkhed, Kerkhelli, Umri, and Bhaisa and surrounding parts are still giving to the Indian mills the much coveted long staple. But the infection of the short staple *barat* is evident and is being regretted by many people. Every effort should be made to preserve the integrity of the long staple. In the old days, the cultivation was on a limited extent, the cotton had to be handginned and transported to distant market places, and handginned seed was carefully selected, and there was no commercial enterprise to divert the minds of the cultivators to any exotic seed. But now the cultivation has been extended, it is a bigger crop to market, and the multiplication of ginning factories has created a revolution in the cultivator's idea of setting much store on the selection of seed. He takes what seed he can conveniently get from the ginning factories, whether it is the best for sowings or not, being derived it may be from a collection of good, bad and indifferent *kapas* in the factory.

(4) All these causes and effects are very difficult to control, and the havoc which the short staple plays with the long staple to the pecuniary benefit of the cultivator is a serious factor, which Government cannot overlook. I can only repeat that a variety of long staple cotton seed must be found or evolved, which can yield from the field a crop well competing in quantity with that of the short staple.

Mr. E. F. DAVUR called and examined.

6268. (President.) I am a mill manager from Aurangabad. We have a ginnery of our own attached to the mills. The best cottons in His Exalted Highness the Nizam's territory come from Nander, Kerkhelli and Umri. The staple of these is just under an inch, say, about $1\frac{1}{8}$ ths inch. I have been handling this cotton for fourteen years in Aurangabad. When I was an assistant at the Empress Mills at Nagpur, I used to handle this cotton. The Nander cotton is deteriorating. We find that as we go further away from the railway to the other side of the Godavari River into parts which are not in touch with the railway or with the more active spirit of the trade that we get better cotton. The hand ginned cotton that we get from out of the way places is the best. I have come across cotton in Aurangabad of which I produce a sample. It is a splendid long staple cotton. I find from experiments that I have made, though not on a very large scale, but with 100 lbs. samples, that it gives a ginning percentage of 35. This is an exceptionally good outturn. I do not know what the cotton is. Some three or four villages have taken to it but they do not grow it methodically. It is grown in some villages in the hilly tract near Aurangabad. It was thought at first that it was Cambodia but the information given to me afterwards was that it was not. The seed seems to have been brought from the Jalgaon Government farm. In my written evidence, I have drawn the attention of the Committee to the admixture which we get in our Aurangabad *kapas*. The cotton mixed with it is a black seeded cotton from which the lint comes off leaving the seed quite clean. The mixture was first noticed about five years ago. There is about four to six per cent. mixture of it in the long staple cotton. It has not the same strength as the Central Provinces *roseum*. I think the outturn of lint from that *kapas* is 31 per cent. but it never comes in separately. In Aurangabad, there are two varieties. The *barat* variety is really Berar *roseum*. I think that the name *barat* is a corruption from *barhad*, which is the Mahratta word for Berar. About 25 years ago there was not much *barat* *kapas* grown in Aurangabad and other places which are contiguous to Khandesh. The seed was probably brought in from Khandesh and it has now got a footing in the low country round about Aurangabad. The indigenous cotton is grown more or less pure in the hilly tracts still. In the third year much of the *barat* nature will have gone out of that *kapas*, as owing to the soil, it gets softer.

6269. The cotton I buy for my mill is mixed. I make a selection. I take as much of the indigenous portion of it as possible for the higher counts, and the rest I set apart for the lower counts. Of course, having to do for a small mill I can manage this. We separate the *kapas* out before ginning. I do my own ginning.

6270. To expect that long staple cotton should get a premium over short staple proportionate to the difference in the counts of yarn spun is impracticable. But if the premium of finer counts over coarser ones increases, then, naturally, long staple cotton would command a better price. The tendency seems to me to be for the price of short staple cotton to be much higher in comparison, but if the public is willing to pay that price for it, how is it possible for long staple to compete with it? There is deliberate mixing of short staple cotton with long to get a better price. I do not think that you can take any practical steps to prevent that sort of thing unless you improve the buyers on the other side.

6271. The cotton of India should be known by the name of *bani* and *barat*. There must be one generic term for the long staple cotton and one for the short staple cotton. Cotton being known by place names is an absurdity. Let all long staple cotton be called *bani*; and then have classes such as good, middling and low. For *barat* cotton there should also be good, middling and low classes. *Barat* or *roseum* grown in Khandesh is much shorter stapled than that grown in Khamgaon or Akola though it is the same variety. Even though it is a short staple cotton, if there is the classification of good or middling staple, it would be

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of assistance in buying as well as in selling. At present if a man has short staple cotton and mixes it with a little long staple and then sends it off to Nander to pass it off as Nander cotton, no care is taken to examine it because it passes as Nander and the matter is finished. Why not have cotton examined for staple from whatever place it comes? It must be classed as short staple if it is mixed. It must only be called long staple if it is pure but, if it is not, it must be rejected. Unless that is done, cotton cannot be improved. If a proper standard is not fixed, it only adds to the difficulties. The whole question is how to keep long and short staple separate so that both will remain at their proper prices relatively. If the transit of cotton from one district to another by rail or cart is stopped, then there is some chance of long staple remaining long staple. But how is the bringing in of seed to be controlled? In His Exalted Highness' Dominions, seed distribution is being controlled by Government. Whether with such control any one will be able to buy outside seed, remains to be seen. Unless seed of long staple cotton that is given out yields the cultivator comparatively good results and with which he is satisfied, this sort of arrangement will not do at all. The first step should be for the Agricultural Department to put out selected seed.

6272. As regards the damping of *kapas*, *kapas* certainly does come in damp. I do not know where it is damped. It is said that the cultivators put the *kapas* in damp places in their own houses or in a small shed and allow it to absorb moisture from the ground for two or three days. On the Hinganghat side, they have a sort of net in which they keep the *bojas*. The net is made out of hemp and there is a good deal of clay in it. The net is put into water before it is filled with cotton and the cotton absorbs all the moisture from it. I have often had to expose *kapas* to the sun from 10 A.M. to 4 P.M. and I have noticed that there was as much as six to seven per cent. difference in weight. These are tricks of the trade which it is very difficult to tackle. It all depends upon the buyer.

6273. (Mr. Hodgkinson.) I mix Aurangabad and Nander cotton, if I want to spin 20s for the market. If I have to spin good 16s. or 20s. for my own weaving, I have to mix a little more Nander with Aurangabad cotton. The length of Nander staple is $\frac{3}{4}$ ths inch and of Aurangabad $\frac{5}{8}$ ths inch. I have not much experience of spinning finer counts than 22s. to 24s. I could not do 30s. with anything but Nander or Karkheli.

6274. As to picking, it would be better if cotton were picked from time to time as the bolls ripen. In our tract I believe the cotton pickers go about and pick all they can. Cotton should be picked oftener. Much unripe cotton comes in under the present system in all the pickings.

6275. (President.) I do not think we submit a return showing the cotton ginned. We have been asked to give a return of other things but not of this. I have not got a press. We have 32 gins which are worked on the mill shaft. It would not be inconvenient if we had to submit returns. As a matter of fact, I am submitting certain returns to the Chamber of Commerce, Bombay, bi-weekly. We get printed forms for that. The Chamber of Commerce wants to know what cotton comes into the mill every fortnight. We could supply any information required.

Mr. BEZONJI FARIDOONJI, Factory-owner and Cotton Merchant, Jalna.

EXAMINED AT RAICHUR, FEBRUARY 24TH, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(a) *Deshi* short staple cotton.

6276. (1) **Experience.**—I have belonged to His Exalted Highness the Nizam's territory and have lived at Jalna since my birth and I have been in actual touch with cotton cultivators, and myself grow cotton in the Aurangabad District and have also stayed at Parbhani and Nander Districts.

6277. (2) **Varieties.**—Seventeen years back, there was very little or, in fact, no short-staple cotton at Aurangabad and Parbhani Districts, but the convenience of the railway brought short staple seeds from Berar Districts and now there is two-thirds Berar seed cultivation which is the short staple and one-third *gaorani*. The short staple cotton is called *Berari*.

6278 (4) **Yields and profits.**—The average yields and profits per acre generally depend on the class of soil and the financial condition of the farmer. If the field is encumbered or mortgaged to money-lenders (*sahukars*) the farmer takes no pain for its outturn, because the *sahukar* takes away all his outturn—a certain fixed rate per *palla* or at a certain price for the whole outturn. The average yield per acre varies from 75 lbs. to 25 lbs. of lint.

6279. (5) **Rotations and manures.**—Generally farmers cultivate cotton by rotation: that is, one year they use the field for grain produce and next year for cotton. Only one or two per cent. of the fields are manured with stable manures.

6280. (7) **Conditions affecting increase in area.**—Now-a-days, the cotton merchants as well as the mill purchasers are buying *kapas*, i.e., seed cotton, with little reference to staple, but with great care as to the outturn and colour. The price of the *kapas* is fixed with reference to the average ginning percentage: thus, *gaorani kapas* (long staple) 411 seers turns out 132 seers or one *palla* of cotton, while the *Berari* (short staple) yields 368 seers of *kapas* to 132 seers or one *palla* of cotton. So the merchants or mill buyers pay a rupee or two more for the *Berari kapas*; thereby they make their cotton *bhojas padtal* (average) much cheaper. So the farmer much ignores staple cotton and grows the type which gives him the highest yield and the highest outturn; without the co-operation of buying merchants and especially the mill-owner, it is impossible to check the increase of the short staple cotton. They should give strict orders to purchase only long staple standard cotton under supervision of the Agricultural Department or such other body; and to be ginned in certain ginning factories under strict supervision, so that the seeds may not be damaged or crushed or adulterated, and then such seeds should be purchased by the Government Agricultural Department and distributed to the cultivators through various depôts by the *takavi* system through agricultural banks.

6281. (8) **Uses of seed and seed selection.**—No seed selection is practised. Selection was formerly made by cultivators and seeds used to be put in water and the light weight seeds removed before sowing. Ten to fifteen years back, only hand-ginned cotton seeds were used for sowing purposes, but now-a-days owing to dear labour as well as the slow process of hand-ginning, the seeds from gineries are used.

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[Continued.]

(b) "*Deshi*" long staple cotton.

6282. (11) **Varieties.**—There are different varieties of long staple cotton in different districts; they are called by different names at different places. For instance, what is called *gaorani* (long staple) at Jalna and Parbhani is called *bani* at Nander, Umri and Karkheli.

6283. (13) **Yields and profits and comparative returns.**—The average yield differs much, as I have shown in my answer in paragraph 6278. If the mill-owners encourage the cultivators by paying high price for the staple cotton instead of *Berari*, as is done in Nander District, and if the farmers are supplied with *gaorani* seeds by the Government on the *takavi* system as I have shown in paragraph 6280 then cultivators will be drawn towards *gaorani kapas* instead of *Berari*.

6284. (16) **Suitability of existing varieties.**—The cotton of the Nizam's territory, once upon a time, carried a very high reputation. Sixty years back, hand-made *malma* cloth of twenty yards long could be folded in a hand fist and used to fetch from Rs. 50 to Rs. 100 per piece, and sometimes more. At present the Tata Mills at Nagpur and Laxmi Mills of Sholapur and one or two mills of Ahmedabad are buying the Nander, Umri and Karkheli cotton, paying exorbitant prices, i.e., about Rs. 20 to Rs. 75 higher than the *Braoh* cotton. Even at present "Good Braoh" rate is about Rs. 600 to Rs. 620 per *khandi* whereas the Karkheli, Umri and Nander cotton is sold at Rs. 700 to Rs. 720 at Umri and Karkheli and Rs. 680 to 700 at Nander per *khandi*. If the *deshi* cotton work of these districts were properly conducted, they would grow better long staple. The causes of this change from long staple to short staple may be briefly indicated. In the first place, the introduction of ginning machinery led the growers in many localities to give up their custom of ginning their cotton by hand and reserving their seed for sowing, and induced them to send their produce to the public ginning factories, with the result that cotton from widely separated areas was mixed together. The seed was returned to the cultivators without discrimination, and thus it commonly happened to be quite unfitted for the particular localities in which it was to be grown. Another cause was, owing to the change of market, the mill purchased the inferior cheap stuff (*Berari*) to make up their average. The result is that the farmers are unable to obtain higher prices for long staple than for the short staple kinds, and as the latter give the larger yields, the farmers naturally turned their attention to the advantages of the short staple cotton *Berari* or mixed over the superior *gaorani* or *bani* variety. The inferiority of cotton is largely due to the impoverishment of the soil and the lack of care in cultivation, and neglect of weeding. Owing to the poverty of farmers the crop is sold or handed over to the *sahukars* as stated in paragraph 6278.

6285. (17) **Prevention of mixing of different varieties.**—The cotton in these districts is generally mixed, but it is less mixed in Nander District than in Aurangabad and Parbhani, as owing to the greater distance from the British Frontier, the *kapas* carts of short staple cotton could not reach there. From the customs and railway references, it will be found that much short staple *kapas* is exported to Parbhani and Nander by merchants to fetch the higher rates there, and so the seeds are mixed with *gaorani* seeds. The Parbhani market is totally wrecked since four years and lost its reputation for long staple cotton, and there is great fear for Nander cotton market, if some severe measures are not taken by the Government to stop the importation of such short staple cotton in Parbhani and Nander Districts. Again, it can be easily found out from customs and railway reports, that not only full-pressed bales but loose cotton *docras* are carried by rail and carts from Jalna to Parbhani and Nander, and from there it is mixed, pressed and re-directed to Bombay and such other places under false names. This is a kind of fraud and it should be dealt with by the Government.

6286. (18) **Uses of seed and seed selection.**—In Aurangabad District, about eighty per cent. of machine-ginned seed is sown, and only twenty per cent. of hand-ginned, while at Parbhani about forty per cent. of hand-ginned seed is sown and, in Nander District, 75 per cent. of hand-ginned seed is sown. In very few cases, cultivators select the seed and clean it before sowing.

II.—COMMERCIAL ASPECT.

6287. (32) **Buying agencies.**—It will be a great help to the farmers and cotton trade if the mill-owners jointly keep their buying agencies under some parties' supervision to buy only the standard cotton and reject the short staple.

III.—STATISTICAL.

6288. (34) **Improvement of statistical information.**—I think it will be a great help to the cotton purchaser and there will be much control over a person who exports short staple cotton from Aurangabad and Parbhani Districts to Nander and such other markets to get the short staple cotton to be stamped as Nander or Umri cotton, if the Government will publish the cotton press returns to avoid fraud. For example, I have a press at Mudkhed where I have not pressed a single bale as yet but I am informed by my agent that more than 300 bales have come in waggons from Hingoli or such other place and then these bales were re-directed to Bombay as if they were Mudkhed cotton and pressed at Mudkhed. This sort of fraud can be stopped by publishing the press reports.

6289. (35) **Publication of Liverpool and Bombay prices.**—The upcountry markets are governed by Bombay markets and most of the merchants get daily market rate by wire but the poor farmer and their *aratyas* are not timely informed of the tone of market: so publication will be of some use to *aratyas* and farmers.

IV.—MANUFACTURE.

(a) *Ginning and pressing.*

6290. (36) **Type and number of gins and presses.**—In the Nizam's Dominions, all single-roller Platt Brother's gins are working. My factories at various places possess the following number of single-roller gins:—

Aurangabad District—			
Jalna	(1) 44 gins and one press of Nasmyth type (our own).		
	(2) 50 gins	Do.	do. (joint stock).
	(3) 50 gins	Do.	do. (joint stock).
	(4) 30 gins	Do.	do. (our own).

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Parbhani District—

- Satona . . . (1) 32 gins and one press of Hodgett Patent (our own).
 Parbhani . . . (2) No gins but a cotton press of Nasmyth type (our own).

Nander District—

- Muddhed . . . (1) 32 gins and one Nasmyth type press (our own).
 Umri . . . (2) 32 gins Do. do. (our own).
 Karkheli . . . (3) 32 gins Do. do. (our own).

6291. (37) **Size of bale.**—The size of the bale is the size of the usual bales, i.e., 400 lbs. in weight and $49 \times 17 \times 20$ inches.

6292. (38) **Saw-gins versus roller-gins.**—Saw-gins can effect the separation of the lint more rapidly than roller-gins but are more liable to injure or break the fibres. In the case of smooth seeded kinds of cotton, the lint is easily detached by the saw-gin, whereas the cotton of these districts is much fuzzy seeded varieties, and the fibre is very firmly attached to the seed, and considerable force is required to remove it. For this reason, the saw-gin is not used here and will not be successful in comparison to single roller gins; even the double-roller gin at my Umri factory was changed for single-roller last year because it was giving us very poor outturn compared to single-roller.

6293. (39) **Effect of saw-gins on Indian cotton.**—Saw-gins are very successful where cotton is not fuzzy seeded and the fibre is not firmly attached to the seeds, and some saw-gins are used at Dharwar and Hubli sides.

6294. (40) **Factory labour.**—Now-a-days, there is great difficulty in obtaining factory labour even by paying fifty to sixty per cent. more than it was paid ten years back. Government is requested to protect factory-owners from labourers who take advances of money and run away to other factories at the time of working season.

6295. (42) **Effect on machinery of replacement of short staple cotton by long staple.**—There is no need of any alteration in gins for short or long staple, but it is only the adjustment of the fixed and moving knives which is adjusted every time by the gin fitters according to the staple of the cotton without any alteration or trouble.

V.—GENERAL.

6296. (46) **Attitude of buyers to improved cottons.**—Buyers in past time, such as Messrs. Ralli Brothers, Volkart Brothers and such other firms, were buying long staple cotton for export to Liverpool and such other places on premium but, as the short staple inferior varieties have appeared and have become distributed throughout the country, the exporters have abandoned the Indian cotton in favour of that of the United States. The demand for finer staples is decreasing and the Indian cotton is freely used by the local mills and Japan for coarse materials.

Mr. BEZONJI FARIDONJI called and examined.

6297. (President.) I attribute the deterioration in the staple of the cotton in the northern part of this State to the import of foreign seed by rail. Before the railway came, no such seed was brought in and it was possible to keep the type pure. My experience is that the deterioration has been serious. I think it would be a great improvement if restrictions were placed on the transport of cotton except to recognized mills and consumers.

6298. The Government has given out Karkheli seed to the cultivators at Jalna and this year the cotton has so much improved that the staple is equal to that of Parbhani cotton and is as good as it was nine years ago. The mill owners now prefer buying at Jalna to buying at Parbhani. This is the result of mixing the Karkheli cotton with the *waradi*. Things have much improved owing to the mixture.

6299. Buyers care very little about staple. By buyers I mean the agents of the mills that come here to purchase cotton. They care for colour and for outturn, but not at all for staple. The outturn of long staple cotton cannot be increased unless the trade is re-organized. The mill owners must really make an effort to get it and pay the proper price for it. I do not think that the cultivator selects his seed as carefully as he used to do formerly. The seeds were formerly selected by the water test and the heavy seeds were sown after being mixed with cow-dung water. The cow-dung water acts as a kind of manure to the seed and at the same time it absorbs the water out of the seed. The cloth referred to in paragraph 6282 of my written evidence was hand woven from Karkheli, Umri and Bhainsa cotton. Very high counts of yarn could be spun from cotton from those places.

6300. The price of Nander cotton per *bhoja* (132 seers net or 140 seers gross) is about Rs. 650 to 675 at present at Nander, but at Karkheli and Umri still higher prices obtain. The prices are from Rs. 680 to 700 per *bhoja* but cotton cannot be got even at those prices. The price of Broach is Rs. 641, so that the price of Karkheli, Umri and Bhainsa cotton is Rs. 50 above Broach against the usual premium of Rs. 15.

6301. The Agricultural Department is doing good work in distributing selected seed and if they continue it much improvement will result. As Mr. Davur has just said and I quite agree with his view, which accords with my own experience, if *bharat* cotton is sown in our fields, the climatic conditions as well as the soil soften the fibre and it becomes a little silky though, of course, it does not become longer in staple.

6302. At present most of the mixing takes place in the gineries. Even if the cotton is grown pure, still it is mixed in the gineries. There is only one way to prevent it. Supposing mill owners want 8,000 bales of certain cottons, say 1,000 bales of Jalna, 5,000 bales of Parbhani and 2,000 bales of other places, then they must have an association which could have proper buyers who would buy on lengthy staple, would get the *kapas* ginned separately on separate gins and would then book it to the respective parties. The seed of that cotton would then be handed over to the Agricultural Department and would be distributed to cultivators through co-operative societies or Central Banks on the *takavi* system.

6303. (Mr. Wadia.) The Government revenue is collected in two instalments. The dates vary in different districts but the revenue is collected after the crop is harvested. There is no necessity for the cultivator to borrow money to pay his land revenue as in British territory. Cultivators only want money for seed and manure and for ploughing and weeding. Weeding is the chief thing. There are some farmers, especially at Jalna, who pay their Government assessment in advance. It is a curious custom but they are anxious to do so. Cultivators sometimes sell some portion of the standing crops in advance to *sahukars* to raise money for marriage ceremonies, for buying bullocks, and so on. Formerly this was done on a large scale. Conditions have now very much improved. The cultivator is getting rich and within four or five years after

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the establishment of banks there will be no more necessity for cultivators to go to the *sahukars* at all. Then they will bring their cotton straight to the market and will get better prices in consequence.

6304. I think *aratyas* are a necessity in this part of the world. Most of the cultivators do not know what the actual weights are. The weight of the *palla* and *khandi* of *kapas* differs in different places. At Jalna it is 140 seers; at Parbhani it is 256 seers, at Nander it is 565 seers and at Karkheli and Umri it is 240 seers. The cultivators do not know the actual weights and they would be robbed if it were not for the *aratya*. Standardized weights for all the cotton districts would be a good thing. The *aratyas* themselves settle with the buyers and sell according to the market. When they settle the price, they do pay the proper price to the cultivator. The *aratya* may make one per cent. or something like that but if he gets anything more and the cultivator comes to know about it, he will not go to that *aratya* again.

6305. I do not think it would be of much use to the farmers if the Bombay prices were posted in the various cotton centres. It would do good to some of the local merchants. As only a few of them get telegrams from Bombay on their own account I do not think that the posting of Liverpool prices is necessary.

6306. The merchants buy Berari cotton at least Rs. 1 per *palla* higher than *gaorani* cotton on account of its higher ginning percentage. Pure *gaorani* takes about three *pallas* of *kapas* for one *palla* of lint. Berari cotton takes $2\frac{3}{4}$ ths *pallas* of *kapas* to give one *palla* of lint. The merchants mix the two classes to get an average percentage. Unless they mixed it, no body would buy it. Last year Mr. Kenny, the Director of Agriculture, tried his best to keep the Karkheli cotton quite separate, he had it ginned separately and then asked the mill owners to buy it but most of them refused to do so. They said that they had to pay a higher price for it and would get a smaller outturn. My idea is that the Agricultural Department should put out seed of a kind which will give higher outturn and longer staple cotton. I have given some seed to Mr. Kenny which had been giving a good outturn and better cotton and the cultivators have been buying that seed at Rs. 20 per *palla* while the ordinary rate is Rs. 6. It is ginned quite separately in my factory and I return the seed to the cultivators. I do not know the name of the cotton.

6307. There is a shortage of labour. We cannot get men even by paying fifty per cent. more than usual. I have requested Government to protect the factory owners because labourers take advances and run away. If I see a man who has taken an advance from me and run away, there is much trouble to produce witnesses. I do not know what the law is, but if the case is dismissed, the man is left off clean handed. We want the man and the advance as well.

6308. It pays to allow crushed seed to be passed through the gins into the ginned cotton. I found that some merchants paid two rupees per day to the gin fitter in my factory in order to get crushed seed passed through the gin. I got to know of this and dismissed the fitter and refused to gin any more cotton for those merchants. They sent it to another factory which did that trick for them. This can be remedied at once by careful supervision on the part of the manager. If the manager goes and feels the cotton, he can at once find out whether there is cut seed in it or not. Some of the ginners gin on commission; but some of the factory owners are also buyers. It pays those ginners, who are also buyers, to get the seed purposely crushed. There should be restrictions imposed by Government. I should like legislation.

6309. (Mr. Hodgkinson.) I have been to Dharwar to see the saw gins there. I have not used saw gins myself but I have seen all the varieties of saw gins at Hubli, Dharwar and Gadag. I cannot say whether saw gins damage the staple as I have no experience but I know that they are useful for American cotton. But for our *kapas* they would be quite useless as our *kapas* has a fuzzy seed, and for cotton with a fuzzy seed, the saw gin gives a very poor outturn. Berari cotton gives a much better ginning outturn than the *gaorani*. In the case of the former, the lint is thick and the cotton does not adhere closely to the seed whereas in the case of *gaorani*, the lint adheres closely to the seed and so more strength has to be used to separate it.

6310. (Mr. Roberts.) If I have to send cotton to Bombay for private sale, I prefer to send *gaorani* than Berari, but it pays better to send mixed cotton to Bombay at present rates. One year I sent pure staple cotton to Bombay and I found that it was very difficult to get the proper price for it. No one knows the value of it until it goes to the blow room. If one asks a couple of rupees higher for it, the mill owners won't pay it. They will buy cheaper cotton and reject one's good stuff. That is one of the main difficulties; if one does send pure cotton, one cannot get the full price for it. I would suggest that mill owners should organize buying. What I mean is that if, say, a couple of mill owners want 2,000 bales of Jalna long staple cotton, they should buy it from the bazaar under some sort of supervision. If there were one body of two or three persons appointed by the mill owners themselves than they could buy the right cotton. My idea is that if they combined, the mill owners would afford to employ reliable buyers who would get better cotton for them. Most of the buyers up country can judge staple but they are in the hands of the *aratyas*. The mill owners pay them about Rs. 40 a month, and naturally they make lots of money by handling *kapas* to the value of lakhs and lakhs of rupees. It is quite impossible to have such low paid men for such work. If the mill owners had such a combination, it would be possible to get a higher standard of cotton.

Mr. J. D. PAPPADAKIS, Agent, Messrs. Ralli Bros., Adoni.

EXAMINED AT RAICHUR, FEBRUARY 25TH, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(a) "Deshi" short staple cotton.

6311. (1) **Experience.**—I have been stationed in the Central Provinces and Berars for eight years and ten years in this district. I am not in direct touch with the cultivators.

6312. (2) **Varieties.**—The varieties of short and long staple cotton grown in this district are *mungari* (short staple) and *jowari* (long staple).

6313. (6) **Comparative returns.**—I understand that the higher lint outturn obtained from the *mungari* *kapas* brings in more to the cultivators than the premium usually obtained from the long staple cotton.

6314. (7) **Conditions affecting increase in area.**—All the cotton sown here is of long staple; short staple, however, is increasing and the area under *jowari* (long staple) will decrease.

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[Continued.]

6315. (8) **Uses of seed and seed selection.**—The seed is generally used as fodder locally, and what is exported from Adoni to other districts is generally utilized as fodder. Before the war, it was exported to Europe. Hand-ginned seed is generally preferred in sowing by the cultivators.

6316. (9) **General economic conditions.**—As the short staple crop germinates and matures much quicker than long staple ones, the cultivators prefer the former, for they get quicker and greater return than the latter.

II.—COMMERCIAL ASPECT.

6317. (30) **Local trade customs.**—The cotton is brought in the market for sale as under :—

Kapas (cotton and seed) as picked from the fields.

Churka (hand-ginned cotton) and cotton machine-ginned outside this market.

(2) The *kapas* and cotton are brought to the market for sale direct by petty dealers who buy the cultivator's *kapas* or cotton in their villages or, in some towns, the cultivators bring their production to the *aratyas* or brokers, and they sell it themselves whenever they get the chance. This kind of brokers advances money to the cultivators on condition that the production of those cultivator's fields will be sold under their *arat*.

6318. (31) **Standardization of commercial names.**—The varieties of cotton are *mungari* and *jowari* (the former short, the latter long staple cotton). The commercial names of the grades are "Good Westerns."

III.—STATISTICAL.

6319. (33) **Improvement of cotton forecast.**—The forecast figures at present are mostly correct so far as the area sown is concerned, but the forecasts of outturn in quantity at time differ from the actual production.

6320. (34) **Improvement of other statistical information.**—I would point out that the fortnightly cotton press returns in their present form are very unsatisfactory, the figures received from the Native States, which are at present collected by the Bombay Chamber of Commerce, being practically unreliable. I would, therefore, suggest that all these figures should be taken over by the Department of Statistics, and I would recommend, in this connexion, also that a system of licensing of ginning and pressing factories should be instituted, as I think that if this were done, correct figures would be easily obtained. The system of license of factories in Native States might at a later date be introduced with good results.

(2) I would also suggest the Department of Statistics should employ a staff of travelling auditors to collect the figures from presses, mills, railways, etc. The figures thus collected would afford valuable check on the fortnightly returns. I would also point out that the cotton crop forecasts might be improved by drawing the estimate to a greater extent than is the case at present from non-official agencies such as local merchants, mills, presses, gins, etc., and too much reliance should not be placed on the official reporting agency which is at present a revenue agency rather than an agricultural reporting agency.

6321. (35) **Prevention of Liverpool and Bombay prices.**—I do not consider publication of Liverpool and Bombay prices necessary as these prices are already known through Bombay agents or up-country merchants.

IV.—MANUFACTURE.

(a) *Ginning and pressing.*

6322. (36) **Type and number of gins and presses.**—The gins in our factory are double rollers, Platt Bros.' make. The number of gins in our factory are 25 double, i.e., 50 rollers.

6323. (41) **Condition of cotton.**—Generally, the condition of all cotton arriving in our market is satisfactory, although in some cases adulteration, such as ground sand, chipped cotton seed and damping etc., is resorted to.

V.—GENERAL.

6324. (46) **Attitude of buyers to improved cotton.**—The cultivators get better prices for improved and carefully kept cotton.

Mr. J. D. PAPPADAKIS called and examined.

6325. (*President.*) In regard to the question of forecasts, I am of opinion that the area shown in them is correct but that the estimate of outturn is not as reliable as that made by my firm. I think that the Agricultural Department and the trade should form a local committee which should enquire from the local merchants what they think of the crop as they know better than anybody else. The pressing and ginning returns are incomplete even for British India. I think the submission of the returns should be made compulsory. There would not be any objection to this from our point of view. If ginning and pressing factories were licensed, the submission of statistics might be made a condition on which the license was granted.

6326. I do not think mixing can be prevented. The *kapas* comes into the market from the ryots quite pure but the petty dealers buy different varieties and mix them up. They buy in quantity; they do not care whether it is long staple cotton or mixed, provided they can get it a rupee or two cheaper for every local unit of weight, such as the *khandi* or *nag* that they buy. Their only object is to make their *kapas* as bulky as possible. We want a better system of buying.

6327. I have been in the Berars. The market system was started when I was there. In the early days, it was very good but the committee has now fallen into the hands of interested parties and the market rules are not worked properly. If the rules were enforced by independent people, the cultivators could sell their cotton direct to the buyers and we could pay higher prices for it. In Nagpur, I have known cases in which although the ordinary rate was Rs. 42 and we offered to pay Rs. 44, we could not get the carts. The *aratya* was only getting the ordinary commission of four annas from us whereas from others he was getting a commission of twelve annas so what did he care whether his constituent was getting Rs. 2 less for his production. He gave the preference to the man who gave the higher commission. The best remedy is auctions. There

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should be independent people to see that the rules are carried out and that the buyer can offer any price he likes and that the person who offers the highest price gets the cotton. Preference must not be given to a buyer who offers a lower price. If you want to protect the cultivator, you must legislate for him. There is no regular market at Adoni, not like the system in Berar. The carts simply collect by the road-side and the cultivators are trusting their *kapas* and cotton to particular brokers for sale but they never sell to us. We really had to anticipate the brokers in order to get cotton. The only way to get cotton was to post clerks on the road gates and to get the carts by giving the cultivators chits offering Rs. 4 or Rs. 5 above the rate the brokers were showing to the cultivators as being the market rates. By doing this I was getting practically the quantity required.

6328. There is no checking of weights and there is no proper supervision. There are standard weights, but a lot of swindling goes on. Ninety per cent. of the cultivators are paid by the brokers for every twelve maunds (i.e., a *nag* of 312 lbs. the local unit) only ten maunds. The mischief is done by the brokers. The gin owner has nothing to do with it. He simply gets the cotton ginned. The buyers and sellers are present at the weighment but the brokers allow their buyers who most of them are their partners to take excess weight, thus reducing the price they offered for the cotton and *kapas*.

6329. (*Mr. Wadia.*) I was a long time in Berar. The Hinganghat cotton used to be good staple cotton but now the staple has gone. Formerly the cultivators used to pick the best and healthiest pods from the plants, get the cotton hand-ginned and use that seed for sowing. Subsequently they found out that short staple *kapas* from other parts of the Berars was giving a better profit and so they have gone in for that. If long and short staple cotton were marketed in a pure state separately, the difference in price between them would widen. Cotton for cotton, the long staple usually brings in, at least Rs. 10 to Rs. 20 per Bombay *khandi* more than the short staple. Now the difference is greater and is Rs. 100 per *khandi*. If this big difference in price continues, I think it will be worth the cultivator's while to grow long staple cotton separately. Mixing is done to reduce the difference between the price of the short staple and the long staple. As a matter of fact, short staple cotton is mixed with the long and is passed off as long staple. I do not see how this mixing can be prevented except by legislation if that could be brought about. I am not in a fit position to say whether it is feasible or not. The gin factory owners must be prevented from grooving the rollers expressly to cut the seed for gaining in weight. I am strongly in favour of the licensing of gineries. That would assist a great deal.

6330. I do not think that the movement of *kapas* could be prevented. Even now both in His Highness the Nizam's territory and in British territory if the villagers hear that there is four annas difference in price between one place and another, they will go to the place where the price is higher. The railways do not pass through the cotton districts. For instance, in this tract, the cultivators have to go fifty to sixty miles before they reach the railway line. The bulk of the arrivals of cotton in every market come in by cart.

6331. As a rule, the cultivators do not sow the seed which they buy from the ginning factories except from factories such as ours or Messrs. Volkarts. Most of them use hand ginned seed for sowing purposes—especially in the Westerns districts and even in Berar. Mixing can be stopped by the buyers making stiff allowances on mixed cotton. If the mixture in long staple is five or ten per cent. of short staple, it cannot be discovered but if it is more than ten per cent., it can be spotted in *kapas*. In the case of lint, if the short staple cotton is in lumps, it can be recognized.

6332. There are pools both in Raichur and in Adoni. Last year, the factories were charging Rs. 5 to Rs. 6, Rs. 5 for the long staple *jowari* cotton and Rs. 6 for the short staple *mungari* cotton. This was for ginning a *nag* of 312 lbs. of lint. For pressing, the charge was Rs. 6 per bale of 400 lbs. This year, the charge for ginning is Rs. 12. My firm is not in the pool. We gin our own cotton. I do not think the ginning charges are unduly high as compared with other places. The charge for short staple is higher than for long staple because the gins have to be specially set for it and the gins are given less outturn per gin per hour. The ginning charges have been raised on account of the high prices of spares, etc., but in spite of that the ginning rate is about Rs. 5 per *nag* too high.

6333. There is no need to send out men from Lancashire to buy here. About sixty per cent. of the crop produced remains in India and forty per cent. of the production is exported. It depends on the demand of the buyers. Mr. Kenny said just now that it was necessary for Lancashire to send out men to buy here. Mr. Kenny is an official and not a merchant. He knows only how to assist the ryots and get the best out of their fields. If you required any quality of cotton, we could give it you in any quantity just as you wanted it. If you wanted 500 bales of *gaorani* pure, you could get it from us.

6334. (*Mr. Roberts.*) We had great difficulties in getting gin power; so we have got our own factories. The ginning factory owners gave so much trouble that we are compelled to have our own factories. We could never get our cotton satisfactorily ginned. The ordinary factory owner never has qualified men nor does he spend money on keeping his gins in order. They never buy materials for replacing the old parts. We found it absolutely necessary to have our own ginning factories everywhere where we have been buying cotton. Here, in Raichur, the cotton which comes in is hand-ginned and is much better than factory ginned. It contains no seed except that there may be a little adulteration to gain weight. We buy *kapas* in Raichur although we have not a factory of our own. We only buy it on a small scale and get it ginned here.

Mr. K. DORABJI, Agent, Messrs. Volkart Bros., Raichur.

EXAMINED AT RAICHUR, FEBRUARY 25TH, 1918.

Written statement.

1.—AGRICULTURAL EXPERIENCE.

(b) "*Deshi*" long staple cotton.

6335. (10) **Experience.**—I am stationed in this part of the country since about ten years and my experience in Western cotton counts fifteen years. In the capacity as cotton selector and as buyer of cotton for my firm, I generally come in contact with cotton cultivators of this district.

6336. (11) **Varieties.**—There is only one variety of cotton grown here which is known commercially as Westerns.

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[Continued.]

6337. (12) **Size of holdings.** I estimate that about 45 per cent. of the land is put under cotton in this district, and the remaining under cereals and oil seeds. The average size of holding of a farmer might be 20 to 25 acres.

6338. (13) **Yields and profits and comparative returns.**—The average yield per acre for cotton is 60lbs. lint, and the profit is about Rs. 30 to 40 according to the fertility of the lands. No short staple cotton is grown in our district.

6339. (15) **Conditions affecting increase in area.**—From my experience in districts where short staple cotton is grown, ryots generally prefer growing such cotton to long staple cotton, on the ground that *roseum* or short staple *kapas* fetches more money, for the yield per acre is larger and being of early growth requires less labour and less cost generally. The *kapas* fetches more value only owing to higher ginning percentage. *Roseum* is a hardy plant and it can stand any climatic changes, whereas *bani* or long staple cotton is a tender plant, requires great care and time to mature. On account of these advantages, there is a general tendency to replace long staple cotton by short staple cotton. If the cultivators find sowing short staple pays them more, you cannot stop this tendency unless the premium on long staple cotton is increased beyond what it is at present, or there is less demand for short staple cotton and the price for this cotton falls considerably. You cannot lose sight of what is good and profitable to the ryots and enforce for the good of manufacturers any law or induce the ryots to sow long staple cotton as long as there is a demand at present rates for short staple cotton by the Indian, Japanese and the China mills, for clothing the vast population of Asia and Africa: Europe and some Indian and Japanese mills do require long staple cotton for fine cloths, to clothe well-to-do people, but the vast population of Asia and Africa require coarser cloths and they cannot do away with short staple cotton altogether. I think the demand for such cotton will always remain and the cultivators should be left the choice to sow what is profitable to them, and our efforts should be directed to increasing the quantity of the cotton crop, not only for long staple cotton, but for both long and short staple cotton. Wherever the soil suits long staple cotton and if there is a tendency to sow short staple cotton on account of financial advantages, and if it is needed that long staple cotton growing should be retained for the vital interest of the Empire as a whole, the Government should make arrangements, on behalf of the manufacturers, to make good any loss by paying the difference or guaranteeing to the ryots higher rate of premium for staple *kapas* by purchasing the crop through Government agency.

6340. (16) **Suitability of existing varieties.**—Now as regards Westerns, it is nice silky and long staple cotton, and the prices of late rule in parity with Broach cotton or a little less. Cultivators are satisfied with the price. It is sown as a *rabi* or winter crop. There is no tendency to sow short staple in *kharij*, as the climate and the soil do not suit it. The land they put one year for cotton is kept for white *juar* next year. The manure used is cowdung and sweepings and that too by only a few ryots as everyone cannot afford to put manure.

6341. (17) **Prevention of mixing of different varieties.** There is no short staple mixing on this side of the country except in cases when the price of Westerns cotton is exceptionally higher than short staple cotton. Some few hundred bales of loose cotton are being imported from Barsi and Nagar side, but such mixing can be detected at once in Bombay as Barsi cotton has a white colour and cannot be properly mixed with Westerns which is rather of a creamy colour. Westerns cotton being soft and silky, it turns to yellowish colour if watering is done. Watering is not practised anywhere in our district. There is no short staple grown here, but near Adoni I notice *kharij kapas* is being sown and marketed in December and January. There is every danger of this extending all around.

6342. (18) **Uses of seed and seed selection.**—There is good deal of hand-ginning in our district and the cultivators only use seeds of trade from hand-ginning for sowing purposes, and consequently there is no fear of any inferior or short staple cotton seeds being mixed. Owing to transport difficulties, machine-ginning is being done only to the extent of 33 per cent. of the total crop, and the remaining crop is marketed in hand-ginned form and consequently this cotton is seedy and very dirty and so Westerns cotton is not greatly patronised by the Indian mills owing to very heavy percentage of blow-room wastage. With the advent of the Secunderabad-Gadag Railway, it is expected that a good many gin factories will spring up in this part of the cotton growing tracts, and machine-ginning will be as popular as in other parts of India, and our cotton will command a good demand.

(2) In my opinion, there should be demonstration farms in each and every cotton district, in Native States also, and it should be demonstrated before all the heads of villages and prominent ryots that the modern ways of cultivation eventually pays more, and manuring of land and deep cultivation will increase the yield of cotton and other products.

II.—COMMERCIAL ASPECT.

6343. (30) **Local trade customs.**—In my opinion, a very good system exists in our district for marketing cotton or any other commodity. The cultivator sells to the village dealer *kapas* or cotton, of himself brings his commodity to the commission agents' godowns in the principal market. He or the dealer generally takes advances from the commission agents, for which such agents charge him twelve per cent. interest per annum and commission for selling the stuff at Re. 1 for the value of the commodity sold by him in open market. These charges are reasonable as the ryot is ignorant and does not understand the local way and system of the market, and he is likely to be cheated if he goes direct to sell to our unscrupulous buyers. The Osmanabad agent has only to depend upon this remuneration; he acts honestly to keep his village customers pleased by selling at the highest possible rate and giving the proper weight of the commodity sold. The scale is kept in his hand and he has to give correct weights both to the buyer and seller. From the buyer of the commodity he gets the brokerage also, so he acts fairly to both the parties. If, at any time, it does not suit the cultivators to sell, he can store his cotton in the commission agent's godown, whereas in other markets such as in Berar or Khandesh he has to sell at any rate the same day even if the market has declined considerably, and besides the scales being in buyers' hands, he is cheated by unscrupulous buyers in their factory compound where the weighing is done.

6344. (31) **Standardization of commercial names.**—Commercial names of our cotton are "Machine-ginned Good Westerns" and "Good Westerns hand-ginned or *churkha*." They are suitable and need no change.

III.—STATISTICAL.

6345. (33) **Improvement of cotton forecast.**—I do not think that the present cotton forecast is sufficiently accurate as far as our province is concerned, but I do not think also that there is anything wrong with the

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Government of India Statistical Department, which might be compiling the figures obtained from the local revenue officers. There should be some improvement as the acreage figures greatly differ from the figures for the expected yield. Arrangements should be made to gather correct information by the local officers before this is submitted to the Government of India Statistical Department, and might be made public in each and every cotton district in vernacular. The local officer should not rely on the figures obtained from *patels* and *kulkarnis*, but he should at least gather information from farmers, merchants, etc.

6346. (35) **Publication of Liverpool and Bombay prices.**—As regards publishing Bombay and Liverpool market rates in up-country market: I do not think this advisable as it is doubtful whether it will be advantageous to the ryots, as the rates fluctuate for future and spot cotton every hour, and instead of doing good to the cultivator, he will be inclined to speculate by keeping back his goods and run into loss, being not an intelligent speculator.

IV.—MANUFACTURE.

(c) Ginning and pressing.

6347. (36) **Type and number of gins and presses.**—There are single as well as double roller gins in our province.

6348. (37) **Size of bale.**—The size of the bale is 9 c. feet.

6349. (38) **Saw gins versus roller gins.**—Saw gins are not used in our district. It is not suitable for our *kapas*; it will break the staple if used.

6350. (40) **Factory labour.**—We only sometimes experience difficulty to obtain labour at harvesting time.

6351. (41) **Condition of cotton.**—*Kapas* generally arrives in this place in dirty condition.

Mr. K. DORABJI called and examined.

6352. (President.) I have got fifteen years' experience of Westerns cotton. The quality of the cotton has remained fairly stationary. There is not much mixture in Westerns. I only know of one case in which 100 bales of Barsi cotton were brought in for the purpose of mixing. The cultivator hand-gins his own seed. Only one third of the crop here is ginned in the factories owing to the distance of villages from the market. There are very few ginning factories in this tract.

6353. I think the marketing arrangements are quite satisfactory. I have never heard of any cases in which false weights were used. The *aratya* gets a commission from the buyer as well as from the seller and so he gives the cultivator proper weight.

6354. (Mr. Wadia.) The marketing system is very good and there is nothing which could be done to improve it. Judging from Mr. Kenny's description, the system of marketing in Parbhani must be different from ours.

6355. I think that there should be a duty on short staple cotton coming into any long staple tract i.e., some form of octroi which would make it less paying to the merchant to bring in short staple cotton. It should be a fairly heavy one, at least five to ten per cent. or more. I think that the *aratyas* in this tract are very honest. They have no interest beyond their commission. I have never found *aratyas* making Rs. 20 or 30 a *khandi*. No Bijapur cotton comes in here.

Mr. SURAJMAL DAYARAM, Merchant, Gulbarga.

EXAMINED AT RAICHUR, FEBRUARY 25TH, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(b) "Deshi" long staple cotton.

6356. (10) **Experience.**—I have been stationed in the district of Gulbarga for the last forty years and have been at Latur for the last ten years. I have been in actual touch with cotton cultivators all this time.

6357. (11) **Varieties.**—Only one variety of long staple cotton is cultivated in the district which I am acquainted with.

6358. **Area under cotton.**—About 40,000 acres are under cotton cultivation in the Gulbarga Taluk. In the Chincholi Taluk, about 20,000 acres have been set apart for the same purpose. I cannot say how things stand at Latur.

6359. (13) **Yields and profits and comparative returns.**—The average yield per acre is from one to one and a half *khandies*, and if proper irrigation arrangements are made, even three *khandies* may be produced. The average net profit to the cultivator is about Rs. 30 per acre.

6360. (14) **Rotations and manures.**—Cotton is cultivated only in the *kharij* season and very little during the *rabi*. The ordinary manure made of cowdung and other refuse is ordinarily applied.

6361. (15) **Conditions affecting increase in area.**—The return which the cultivator gets for cotton is much more advantageous to him than what he gets from other food crops. As no short staple or other exotic cotton is grown, I cannot draw any comparison.

(2) If any increase is made in the area, under *deshi* long staple cotton, the following harmful conditions would set in:—Length of ginning season and climatic conditions do not, of course, stand in the way of any increase in this area. The question of irrigation does not come in our calculations, simply because cotton is produced only in the dry cultivated lands. The most important thing to be taken into consideration is, that a harmful condition would set in with food crops. At present, side by side with his cotton the cultivator also grows other food crops, which are the chief means of his subsistence. This system also helps him in this way that, if one crop fails, the other is there to save him from starvation. Besides

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the *Sauni* and the *Kartiki* rains are very injurious to the cotton crop. With this fact in view, the cultivator generally grows three or four kinds of crop in his field, so that, if the cotton crop is lost, he might fall back on the others. Had he devoted the whole area to cotton, he would have faced utter ruin. This important fact should always be borne in mind if any increase in this area is contemplated.

6362. (16) **Suitability of existing varieties.**—As I have never experimented myself, I am not in a position to say if any superior type of long staple cotton can be introduced. If Government sets up an experimental farm and if satisfactory results follow, the cultivators would very gladly take advantage of it.

6363. (17) **Prevention of mixing of different varieties.**—From the traders' point of view, it is almost impossible to prevent the mixing of short with long staple cotton.

6364. (18) **Uses of seed and seed selection.**—The seed is used partly as fodder for cattle and partly for the production of cotton seed oil. The seed which is used for sowing is not selected with reference to whether it is hand-ginned or machine-ginned. Those seeds which have a whitish appearance are generally preferred for this purpose. Those which have a red or blackish colour are discarded.

(2) In my opinion, the present system of seed selection and cultivation is quite suitable and the seed which is used at present is quite useful from the standpoint of local conditions generally obtaining. The *khoshki* area under cotton is very small in proportion to the whole cultivated area. In my opinion, this cotton area should be increased.

II.—COMMERCIAL ASPECT.

6365. (30) **Local trade customs.**—The system of commission is, generally, of two kinds. The commission is fixed either on the market value or per *khandi* measure. The rate of commission fluctuates from eight annas to Re. 1. Advances are also made and forward purchase system practised. When the cultivator happens to be in need of money, the buyer advances him the amount on condition that he would return the money in kind at a particular rate fixed by him. Another system prevailing is this, that an agreement is made between the purchaser and the cultivator that the latter would supply a fixed quantity of cotton within a certain date. If the cultivator fails to do this, then he would be required to return the money originally borrowed on the expiry of the period, plus any difference in the price of cotton is quoted on that particular date. This system is locally called *bai-e-salam*. Another system of contract is also practised. By this system, no advances are mutually made or received, but only an agreement is entered into by which the cultivator engages himself to supply a certain quantity of raw cotton on the one hand, while the buyer agrees to purchase the same quantities on a certain fixed rate. If, for some reason, the cultivator fails to bring the promised supplies or the buyer does not see his way to purchase it, then the profit or loss is calculated on the market quotation of that day and mutually shared. These are the only systems locally obtaining.

6366. (31) **Standardization of commercial names.**—The cotton which is produced in the Raichur District and the Madras Presidency is called Western cotton. That of the Carnatic Districts is called "Next Western" and cotton which is produced in Broach, Bengal, Khandesh, Gujarat, Akola and Khamgaon is called after the name of the district from which it comes. This system of names is very advantageous, because cotton which is produced in one district differs from that of the other districts. In my opinion, no change in the system is necessary or advisable.

6367. (32) **Buying agencies.**—The best form of buying agency is that which is based on the commission agent's system.

III.—STATISTICAL.

6368. (33) **Improvement of statistical information.**—The present system of cotton forecast is far from accurate. It can be improved in this way, that, when the cotton crop is ready, a certain area should be fixed and the cotton on it should be gathered. By repeating this process several times a sufficiently accurate forecast might be prepared.

6369. (35) **Publication of Liverpool and Bombay prices.**—At present Liverpool and Bombay cotton prices are published and circulated only for the benefit of the members of the cotton association. I would very much like to see their daily publication in up-country markets. Their publication should not be limited to the members of the cotton association only but they should be supplied to all the trading public.

IV.—MANUFACTURE.

(a) Ginning and pressing.

6370. (36) **Type and number of gins and presses.**—I have got 96 gins in three of my factories. All these are Five-Bearing Platt Brothers' machines. I have also one Nasmyth Wilson press.

6371. (37) **Size of bale.**—The size of the bales produced in my factory is 18×50 inches.

6372. (38) **Saw gins versus roller gins.**—I prefer roller gins. In these parts, the roller gin has proved very successful with Indian cotton. I have no experience of saw gins.

6373. (40) **Factory labour.**—I have experienced no difficulties whatever in obtaining labour.

6374. (41) **Condition of cotton.**—The raw cotton which reaches my factory has generally leaves mixed with it. This can be only remedied by ginning.

6375. (42) **Effect on machinery of replacement of short staple cotton by long staple.**—If long staple cotton is replaced by short staple cotton, substantial alterations would have to be made in the machinery.

Mr. SURAJMAL DAYARAM called and examined.

6376. (Mr. Wadia.) I have two ginning factories and one pressing factory at Latur. I have one ginning factory at Sulapet in the Chincholi taluk, of the Gulbarga district. I am a merchant in Gulbarga with transactions on a fairly large scale. I gin cotton on commission as well as gin my own cotton. My factory at Latur works for the Narsinghi Mills and Kohinoor Mills, Bombay. I have got altogether 72 gins in the two factories at Latur of which one factory has 48 and the other 24. They are all single roller gins. I have also a Nasmyth Wilson press. My ginning charges are Rs. 5-1-6 (Halli Sicca) per *bhoja* of 256 lbs. The pressing charges are Rs. 4 to Rs. 4-8 (British money) per bale of 400 lbs. There is no pool at Latur because the factory owners could not settle amongst themselves what share of the pool they should get. There are only two factories at Sulapet and there is no pool there.

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6377. At Latur, I get pure cotton on the whole though some carts may contain a mixture of *parli kapas*. The merchants who get their cotton ginned by me, mix all their purchases before ginning. Most of the mills have their agents at Gulbarga, who purchase the cotton and divide the daily arrivals between them; they take their cotton to the various ginning factories with which they have made arrangements and there they make one heap of all their purchases; they do not separate the good cotton from the bad. This year the yield of *kapas* has been small and so the quantity coming into Latur has been much less than usual. In my opinion the cotton arriving at Latur has not deteriorated. It is *gaorani* cotton. If a cultivator fails to deliver cotton, he has to pay up the price of what he fails to deliver.

Mr. HANAMANTAPPAH, Merchant, Raichur.

EXAMINED AT RAICHUR, FEBRUARY 25TH, 1918.

Written statement.

I.—AGRICULTURAL EXPERIENCE.

(a) "Deshi" long staple cotton.

6378. (10) **Experience.**—I have got an experience of twenty years in the above cotton in the Raichur District and I have also been in close touch with the cultivators.

6379. (11) **Varieties.**—In our district only one type of cotton is grown and it is called "Westerns."

6380. (12) **Size of holdings.**—The average size of the holding of cotton in our district is twenty acres and three-eighths of the holding is under cotton.

6381. (13) **Yields and profits and comparative returns.**—The average yield per acre is 234 lbs. The profits and losses solely depend upon the nature of the markets.

(2) The difference between the long staple cotton and short staple cotton of our district is Rs. 10 to Rs. 5, according to the qualities, per *nag* of 315 lbs. I would incidentally remark that we differentiate between long staple cotton and short staple cotton thus:—Short staple cotton contains yellow stains and black leaves, and thereby the colour seems to be dull. Even granting that the short staple cotton is white in colour, even after containing yellow, stony and black leaves, it is to be differentiated by testing the staple and that is done by experience. Hence the price of short staple cotton is less from Rs. 10 to 5 than that of long staple cotton.

6382. (14) **Rotations and manures.**—If cotton is grown this year in the field, the next year we cultivate *juar* in the same field. This alternative cultivation is itself a strong manure for the field. Further manure (extraordinary) is not used except ordinary cowdung, etc.

6383. (15) **Conditions affecting increase in area.**—We have no irrigation supply in our districts. As our district is naturally hot, we require seasonal rainfall for the prospects of the crop, otherwise the crop is affected. More rain also affects the crop. By this alternative cultivation in the field (i.e., one year cotton and the other year *juar*) the crop is not affected, but it is more helpful for the crops. Of course, it is detrimental for the cotton crop if such alternative cultivation is not carefully observed. Owing to want of labour supply on several occasions before the crop is got into our hands, it affects the improvement of the crop.

6384. (16) **Suitability of existing varieties.**—In our district, only Westerns are grown and other types are not introduced as the soil not suitable for other types except Westerns.

6385. (17) **Prevention of mixing of different varieties.**—If the buyers of the cotton stop purchases of the mixed cotton, mixing will be prevented.

6386. (18) **Uses of seed and seed selection.**—Seeds are used for cattle, sowing and extracting oil, etc. One-third of the production of the seed is sent to outstations (for export) and two-thirds are used for cattle and sowings.

(2) We are experienced in seed selection and that we do thus:—There are heavy and light seeds. The light seeds are less in weight as they do not contain proper kernel (white in colour), which we do not use for sowing. They are also used for cattle in a comparatively larger quantity than the heavier ones. For sowing purposes, we specially use hand-ginned seed.

II.—COMMERCIAL ASPECT.

6387. (30) **Local trade customs.**—Generally cotton is received from the surrounding villages of our district. On arrival of the cotton, the buyers fix a certain rate considering the tendency of the market, and afterwards cotton is passed and marked. If any inferior cotton is seen, buyers proportionately reduce the price from the original one and mark such gunnies in a different manner in order to distinguish easily between the superior and inferior. The cotton is generally brought packed in *loras*. The prices are fixed per *nag* of twelve maunds or 315 lbs. in our district. The buyers buy at a certain rate and try to sell to exporters or mills direct or through commission agents, paying them commission, retaining the margin of Rs. 4 to Rs. 5 as profit. The system of agency we follow is that our goods are given to our commission agents, who sell them to other firms according to the market rate per *khandi*, after receiving commission from us at a rate which goes on varying according to supply or demand.

(2) We have no system of advances in our district. The future contract system observed is as follows:—We get the price fixed per *nag* (so far as the Nizam's Dominions and part of the Madras Presidency which are joined at Raichur are concerned) or per *khandi* (so far as the Bombay Presidency or the distant part of the Madras Presidency are concerned) and promise to deliver cotton after two or three months or a longer period according to the nature of the case. It is a risky business and the profit and loss depends upon the demand for the cotton and prices.

III.—STATISTICAL.

6388. (33) **Improvement of cotton forecast.**—I am of opinion that the forecast given is almost accurate, provided there is proper and seasonable rainfall.

6389. (35) **Publication of Liverpool and Bombay prices.**—We get our ideas from the Liverpool and Bombay reports of the comparison of the crop estimate between last year and the current; the number of

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bales received in and exported from Bombay last year and what the stock in Bombay is at present. After obtaining this information we are in a position to guess the tendency of the market and afford facilities to the merchants. The information received serves as a guide to the merchants.

IV.—MANUFACTURE.

(a) *Ginning and pressing.*

6390. (36) **Type and number of gins and presses.**—I have Platt Brothers single rollers gins numbering 57 and three presses of which two are Nesmyth and one Oeto (Gin press). They are from Liverpool and America.

6391. (37) **Size of bale.**—The bales produced measure Length—4 feet 1 inch. Breadth—1 foot 5 inches. Height—1 foot 6 inches.

6392. (38) **Saw gins versus roller gins.**—Saw gins are used only for long staple hand *kapas* to be ginned. Our cotton being soft, only roller gins are used. If soft cotton are given to the saw gin, the staple becomes short, and the gins give very hard cuts. Saw gins are successful for Indian cotton only in such places where hard cotton is grown.

6393. (40) **Factory labour.**—If proper measures are taken to keep a sound stock of firewood, coal, gin presses, store, etc., and to engage the labourers for the working of gins and press, no difficulties will be experienced. Any slackness in the above will, of course, tell upon the working of the factory.

6394. (41) **Condition of cotton.**—In picking through oversight, cotton is being mixed at random. Not being fully acquainted with the matter, I cannot suggest any remedy.

6395. (42) **Effect on machinery of replacement of short staple cotton by long staple.**—Grids must to be changed if short staple cotton is used in the gin factory as the seeds of the above are bigger than long staple cotton. If not changed, the cotton will be separated from the seeds but will be mixed up with the seeds.

Mr. HANAMANTAPPAH called and examined.

(Translation.)

6396. (President.) I have a ginning and pressing factory and am also a cotton merchant. I have got two presses and a ginning factory at Yadgin and a ginning factory and a press at Raichur. I gin for myself as well as on commission. I buy *kapas* direct from *aratyas* and not from cultivators. The *aratyas* take one per cent. commission from each side on the value of *kapas*. For lint, the seller pays annas eight per *nag*. There is only one kind of *kapas* here and that is Westerns. There is no mixture of Berar cotton in this tract. People do not bring in fly or any dirty stuff for mixture with the cotton. Nobody asks us to adulterate cotton. If they did, we should refuse because it would give us a bad name. There are six ginning factories here and six presses. With the exception of Messrs. Volkert Bros. and the Bombay Cotton Company the other factory owners belong to the pool. Messrs. Ralli Bros. do not gin or press here. The pressing charges used to be Rs. 4 to Rs. 4.8 per bale but owing to the rise in prices of hoops and gummies, it has now been raised to Rs. 6. Re. 1 out of the pressing charges goes to the pool. Out of the ginning charges of Rs. 6, Re. 1 goes to the pool and Rs. 5 to the factory owners. We are never asked to let the rollers become grooved so as to allow crushed seed to pass through into the lint. If this were allowed, the Bombay Cotton Trade Association would not pass the cotton. In Adoni, there are two or three kinds of cotton and so the grids in the gins are changed for the different periods.

APPENDIX I.

Note by Mr. D. T. Chadwick, I.C.S., Indian Trade Commissioner, on Indian cotton.

This note is written at a distance and, therefore, under obvious disadvantages so far as opportunities for reference and verification of details are concerned, nor do I attempt to give facts regarding Madras. All those will have been deposed to more accurately than I can give them.

2. The central fact in any established industry is that the manufacturer needs:—

(1) raw material for a particular purpose.

(2) the certainty that he can get supplies year by year of the same quality and character.

Variations in natural conditions from year to year militate against such absolute certainty as far as crops are concerned; but the whole scheme of allowances, arbitrations, etc., whilst providing for normal variations yet affords no real compensation to the manufacturer who finds he has received an article different from what he needed. The specialization of modern industry tends to emphasize more and more the need of the manufacturer being certain that supplies of similar and steady quality will come forward year by year in large bulk. This applies particularly to overseas markets. The statement that if the manufacturer will only pay more he will get a better or purer article does not completely meet the difficulty. It is only an odd chance that an isolated consignment of good quality can get a better price owing to the broker or merchant happening to find someone who is looking for a little of that particular grade who is short in his usual source of supply. Manufacturers will only give as a rule a higher price where they hope or expect that the same grade will come forward in larger quantities in succeeding years. Brokers in the United Kingdom say that higher prices have repeatedly been given for better qualities of Indian produce but comparatively rarely has the initial quality been maintained in subsequent years—mixing or deterioration or something has happened to the consignments. The results is that many almost distrust these new samples of better quality (I am not here alluding merely to cotton) which keep coming from India. I would almost go so far as to say that, when a manufacturer is offered a small lot of produce from a new country or a new grade of produce from an old one, his readiness to try it and pay a good price is influenced as much or more by the confidence he has of getting more like it every year than by his private opinion of the intrinsic value of that particular consignment. If an instance in cotton were needed, it is afforded by the difficulty experienced by the British Cotton Growing Association in getting Nigerian cotton at first tried and then established on the market, though for some years now arbitrations and disputes on Nigerian cotton have been very few and its quality for length of staple stands high. Experience in several lines has not convinced the market generally of India's ability to maintain quality and purity at a uniformly high level year by year although undoubtedly the reputations of some of the leading marks stand high. If a feeling of confidence in India's ability to maintain quality

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[Continued.]

in bulk can be strengthened we should, I think not find such difficulty in obtaining overseas what we think is the fair market price for our new selections and Indian export houses will find less difficulty in handling and establishing such grades. This question of confidence in the quality of the future supply is of much greater importance to the manufacturer and to the trade than the merits of any particular sample; and where there seems to be a fair probability of the quality being so maintained higher prices are and have been obtained (*vide* Timmevelly's Companies No. 2 and No. 3).

3. Experience has seemed to show that, in the earlier stages of introducing a better strain of cotton, it is the local spinner who is in a position to pick and choose his crop who has, on the whole, been most helpful in giving better prices for quality. There would also seem some reason for saying that the power of spinners in this matter varies directly with the propinquity of the mills to the local producing area. It was certainly the case in Timmevelly and appears to have been so in the United Provinces with the Cawnpore mills; whilst to a spectator it would seem probable that the difficulties experienced in Bombay would have been lessened had the mills been more scattered in the cotton producing tracts rather than concentrated in Bombay. I do not quite understand the position in the Punjab. Great success has been obtained by organising open markets in which apparently *kapas* is sold though, from one of Mr. Roberts' articles in the *Agricultural Journal*, it would seem that, at least at first, that cotton became mixed before it reached the Bombay spinner but generally there would seem to be some justification for the view that the further the mills are from the cotton producing tracts the harder it is.

(a) to establish a new grade of better quality.

(b) to get cultivators a fair share of any enhanced price.

(c) to give confidence in the maintenance of the purity and quality of supplies in future years and consequently to obtain supplies in large bulk.

Yet unless these last two are ensured I fail to see anything but a vicious succession of new kinds or selections being boomed, flourishing for a time and, possibly, to a limited degree, being praised and then languishing and being cursed.

4. The Agricultural Departments have obtained various better types and by their own efforts and the aid of few in the cotton trade or by the aid of the Co-operative Departments have got better prices to the cultivators but there is still comparatively little certainty that, in large scale trading, the spinner will get year by year those better types true to quality.

5. I consider Government inspection for purpose of grading or even of inspecting ginned cotton quite impracticable on account of lack of knowledge and skill on account of the cost, delay and interference with trade which would result but the question of ensuring confidence in the possibility of maintaining quality is very important for the certainty of India's market and for getting better prices to the cultivators. The trade have developed their own organisations for judging cotton whose decisions are accepted in the trade and I would submit whether some means of co-operation between Government and such organisations could not be developed so as to control malpractices which are detrimental to the fair reputation of India.

6. These trade organisations are, or should be, the best judges of the quality of cotton and their judgments are already accepted in the trade. Many of the larger firms have developed and maintained certain types or marks and I believe that shipments to many of these types or marks are very satisfactory being an improvement on former methods. There are thus evidences both of better cottons being grown in India and of more care over many shipments. One important point for the present would then appear to be to try to allow both these lines of effort greater scope by trying to check what are really malpractices or what might be termed "gamblings in arbitration." Differences of opinion in regard to agricultural produce will arise and within narrow limits are met by arbitrations. But arbitrations which give rise to severe penalties or total rejections result from what are really bad tenders which are nothing but an annoyance to the manufacturer and react unfavourably on India's reputation. Arbitrations were not designed to settle such cases of bad trading and here I think Government might well step in as the custodian of India's reputation. The suggestion I venture to put forward—it is no more than a suggestion and would require threshing out with the trade and is very probably open to insuperable objections—is outlined as follows: The idea behind it is co-operation between Government and the present organisation to increase confidence in the quality of Indian cotton and at the same time to reduce Government inspection to a minimum and to leave to the trade the judging and grading of produce. At one end there are these arbitration committees which are competent to judge cotton, at the other end are the presses which give a means whereby cotton can be identified.

7. (1) All cotton presses to be licensed; licenses to be given freely.

(2) All bales to be marked with the name (or recognised mark of the press) and numbered as determined by rules.

(3) On pressing bales, the press to register the person for whom it is baled and the type or description of quality to which the cotton purports to conform.

(4) No unmarked bales to be accepted for transport by rail or for shipment.

(5) Arrangements with local and selected Foreign Cotton Associations whereby decisions on arbitrations on Indian cotton in cases where the penalty imposed exceeds a certain proportion of the value or where total rejection has been ordered, are communicated to a Government Department specifying the marks on the bales arbitrated upon.

(6) These decisions of such arbitrations are final and conclusive proof that those bales arbitrated upon were not a fair tender and were that much below standard.

(7) The press at which such cotton has been pressed would then be liable to fine where it had pressed the cotton on its own account or the person for whom it had been pressed where it had been pressed for a third party, unless it could be shown from the registers that it had been declared at time of pressing as of a lower grade than that at which the shipper or seller in Bombay, etc., had tendered it, in which case that firm or person would be liable for fine. It might thus become customary for dealers and purchasers to insist on extracts from the press register at time of purchase to see how the cotton was described at time of pressing and greater care over mixing, etc. come to be exercised both at the presses and by dealers.

(8) A high percentage of such reports might perhaps result in the withdrawal of the license from a press or black listing a dealer so that no one could press cotton for him for a certain period.

8. I admit that this is only a sketch and may be quite unworkable. One drawback to it is the habit that some buyers and sellers have of sending nearly every case to arbitration and the suspicion which at times holds that sometimes arbitrators tend to adopt more the role of counsel than that of judges. If no such

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[Continued.]

suspicion existed and such bodies were purely judicial official co-operation in their judgments would be easier. But, in spite of this, evidence has repeatedly been brought forward—

- (1) that mixing, etc., does take place to the detriment of India's better cottons,
- (2) therefore that obviously present trade organizations are not sufficiently powerful to prevent it. Experience of the Bombay Cotton Funds Act showed that Government inspection and grading was either impracticable or objectionable. Is another method therefore possible whereby Government and trade organisations can co-operate to render the penalties for real abuses more deterrent?

9. Incidentally, the maintenance of such press registers would facilitate the collection of returns from them for statistical purposes which serve as a check on forecasts and also indicate how the crop is coming forward.

10. *Long and short staple cotton.* India has been repeatedly reproached especially from the United Kingdom for the shortness of the staple of Indian cotton. At the same time, there is a body of opinion in England which seemingly is increasing—that Lancashire has tended to expect too much of Indian cotton and has not always used it for the purposes best suited for it. There is a fair probability that, in the future, due to greater diversity in processes there will be a greater demand even in Lancashire for the short staple kinds. There is undoubtedly a market for them in India and elsewhere. At the same time, the longest of our Indian cottons just come within the range of Lancashire's needs at present—they do very little more—and if delivered steadily pure in bulk would probably command a better scale there. But in India itself it would seem most probable that the consumption of the longer cottons by mills in India will gradually and steadily increase. The presence then of better cottons pure in India should if their cultivation pays the farmer increase the stability and diversity of the Indian mills. There is in fact a demand for both kinds but in both cases the trade wants the cotton in bulk and uniform—even running—as the phrase is. One is thus led to considering the practicability of

- (a) in consultation with the trade assigning certain broad areas in India to broad types,
- (b) organising the seed supply and co-operative scale on a much larger and wider scale than has hitherto been possible in many parts of India,
- (c) increasing very greatly the staff at work in cotton areas both in regard to research and organisation of seed supply and sale,
- (d) presenting in a more accessible and easily intelligible form the methods and progress of work both in regard to research, selection and to administrative efforts,
- (e) agreeing with the trade as to what tests should be applied to new selections, in what form and where they should be carried out.

11. I do not believe the interests of the cultivator and the consumer are at bottom mutually antagonistic. It may easily happen that, in a particular tract, cotton of a kind different from that formerly cultivated may be proved to be more remunerative to the cultivator but I cannot see that it is to his interest in the long run to deliver either product mixed; the old maxim that the good salesman is the man who persuades a customer to buy an article he does not want or really like is now largely discredited in favour of the principle that the good house is the one which meets its customers' needs. But whether or not control be exercised over the trade to check mixing—and some system of co-operative control would, I think, be advisable if the details could be threshed out—research, selection and the organisation of seed supply on a larger scale is needed and certainly, so far as Madras is concerned, this is not possible without a largely increased agricultural staff.

12. What has been done is only an earnest of what can be done. This increase in staff is all the more essential if work is to be directed, at least in certain tracts, to quality in bulk as well as to yield. Take Madras with its great diversity of crops to all of which the Agricultural Department should attend.

(1) There are well known kinds of cotton growing already in the Presidency which it has not been possible yet to touch—this is an obvious and clear weakness in our work on cotton.

(2) Even in the varieties on which work has started it has so far been mainly confined to selection of strains with varying degrees of success. I do not believe for a moment that the last word in such selection work has been said (nor does any one else). Work on a larger and more thorough scale still is needed in Madras not only because probably better selections still can be found but because

- (a) general experience with all crops everywhere is that, after being grown on ordinary commercial conditions for a term of years, deterioration frequently sets in individual strains and new pure strains are needed.
- (b) In the urgency of attending to other crops and of getting some agricultural improvements adopted by the farmers, I do not consider that so far it has been fully determined (in Madras at least) what precautions are necessary to ensure that seed distributed very widely year by year is essentially pure. As a strain becomes more widely grown, the chances of cross fertilization are inevitably increased and at the same time the possibilities of exercising laboratory precautions decreased. As things are at present, I should expect to find the longevity of our selected strains comparatively short or a need for greater care and precautions to ensure purity arise—this last means staff and time.
- (c) The possibilities of Mendelian work—a show class of work—on cotton have not been explored. Mr. Parnell is fully occupied on rice, and
- (d) I do not consider that sufficient work has been done on the "welfare" conditions (if I may use that term) of cotton and the effect of environment generally on the plant. This I venture to expect will have as important a bearing on yield and possibly on other characteristics as has selection or breeding. A careful reading of any of the Howards' work for instance or of Dr. Ball's work in Egypt show how far and how vitally their researches extend beyond mere breeding and selection. Besides we have had a small illustration in Tinnevely where one type seemed to yield more profusely in one part of the tract and another in another part though both very similar as regards length of staple.

12. I do not know what opinion to the Committee has been expressed in Madras and I realise much more weight must be attached to such opinion than to any I now express, but considering the complexity of the questions connected with rice and the need for more detailed work on cotton if quicker and fuller results are to be obtained I consider I was wrong in the opinion I once expressed that one botanist and his staff could

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[Continued.]

deal adequately with both rice and cotton. The Deputy Directors with all their diverse duties cannot do the full botanical work indicated above though the results we have hitherto obtained in Madras have been due to their efforts. Concurrently with an increase in district staff, I think that a botanist primarily for cotton should produce quicker and fuller results. Such staff should also repay expenditure and be justified especially where qualities in cotton other than yield are being kept in view.

13. Here I would put in a strong plea that more co-ordination amongst work on cotton in India as a whole is most desirable. Conditions of climate, land tenure methods of local trade, relative importance of other crops, etc., vary greatly and provinces must be free to test and develop organisations best suited for their conditions, but, at the same time, cotton has an all India importance, ignores provincial boundaries and anything which tends to present the work in progress and the aims in view as a whole renders it more intelligible to the trade both in India and elsewhere and, therefore, promotes co-operation and useful advice and is more useful and stimulating to workers on cotton in different parts of India. The tendency already is in this direction e.g., the form of presentation of crop forecasts and the issue and demand for the cotton map, etc.

14. I would suggest a few points in which I think advantages would be gained by more agreement in method and presentation of results.

(a) The testing and valuing of samples, etc. At present, the one frequently accepted is a money valuation which is most important and useful but which depends after all on the combination of a variety of characteristics. At times reports are obtained to the effect that the results are so and so but "had we had a larger quantity to permit us to adjust our machinery, the results would probably have been better." Cases have again occurred in which the same samples have been sent to different centres and have been valued differently and have given somewhat discordant results on testing. Then again it is almost inevitable that, especially when working for quality, relative terms, e.g., slightly off colour, deficient in length, etc., are largely used which depend partly on personal factors. There is a saying in Lancashire in regard to judging cotton: "Pull it as if you liked it" in which there is much truth. Moreover these terms convey different ideas to people familiar with different cottons. Then, again, our agricultural reports frequently contain the results of tests and valuations of samples. It would be an advantage to all who read them if the quantity submitted for test were always clearly indicated, whether a handful or two bales, for instance. It ought to be possible between the departments and the trade to agree for each of the well known grades of Indian cotton—

- (1) to what firms samples should be given for test,
- (2) what the conditions of a test should be and how recorded,
- (3) what quantities should be submitted for test.

It would make the results of all stations more useful and intelligible to everyone. This would further be increased if it could always be stated what the object aimed at in the experimental work was. Generally, I imagine, it would be a combination of yield and some characteristic of that local cotton which was of peculiar value. This might not invariably be length. I could conceive that colour and bloom or strength of fibre or strength of yarn (which really might mean twist in the fibre and not strength of individual hairs) might be of greater importance. As things are at present, it is also conceivably possible for two different provinces to be working on the same cotton towards two different ideals—possibly to some extent mutually exclusive—and yet putting it out under the same name, yet if as a result of the two different lines of effort, considerable differences in spinning qualities did happen to result, this might only end in misunderstanding. This is not entirely an imaginary risk. Thus at Gadag it would appear from some of the station reports that selection of Cambodia cotton was directed chiefly or solely to increase of ginning percentage. I am making no charges but only visualising what misunderstandings might happen and might be avoided by more co-ordination without sacrifice of initiative. So far experience has generally shown that selection purely for ginning percentage results not infrequently in loss of length of staple. I am not prepared to say that that has been the experience with Cambodia at Gadag and, even if it had been, I do not doubt the course of selection was correct for the conditions of Gadag. Yet, in the conditions in parts of Madras, considerable attention would be paid to preserving length of staple in work on Cambodia. And supposing that these two different lines of work resulted ultimately in the evolution of somewhat different types, it would conceivably confuse the trade and might possibly react on the reputation of the long-stapled one if both came on the market as Cambodia. I do not wish to be misunderstood. I do not say that has happened. But it is a danger I foresee that might occur through lack of co-ordination between provinces and want of collected and regular presentation of all the work in progress in India on cotton in clear form in which the tables of the different experimental stations are given in forms strictly comparable year by year and the tests have been applied in standardized ways agreed on with the trade, clearly specified and presented and understood. The carrying out of tests by firms takes time and trouble and I am certain that every Agricultural Department in India is especially indebted to some firms or other; but if qualities other than those of yield are to receive attention, it would be an advantage to get these tests standardised and conducted at agreed and specified places. Remuneration for time and labour would possibly be needed.

(b) If this be done, the issue would be greatly increased in value by including full accounts of the administrative and executive action taken in spreading new strains.

In fact I should like to see a regularly published issue on "Cotton" which not only covering the above would also contain trade statistics and trade reports including changes in rules of the recognised cotton associations and trade articles. The crop is worthy of it; and the more opportunities are made and used for Government economic departments, agriculturalists and the commercial world each to understand the other's methods, work and opinions, the more will common ground be found and opportunities appear for co-ordinated action for the economic benefit of India. A tentative and small effort towards agreeing with the trade as to where samples of cotton should be tested was made at the Agricultural and Trade Conference in Madras in December 1914, but details of tests were not settled.

14. *Supply of seed.*—I consider that a Government should have power in case of need to forbid certain types of seed being sown pure or mixed in certain tracts. It might easily at times pay the cultivator that a heavy yielding lower grade variety is more profitable than the better type which he has been growing but it is preferable that, in such cases, the new variety should be put out pure after full test and trial made under control rather than it creep in gradually as a mixture. This leads to different tracts for different general types on broad lines. But whilst holding strongly that the first duty of the Agricultural Department is to increase the return of agricultural land to the cultivator, I am not convinced, so far as Madras is concerned that ginning percentage is the sole test for obtaining such increased profits for him in cotton until much

APPENDIX II.] SUMMARY OF INTERVIEWS WITH LANCASHIRE REPRESENTATIVES.

more work has been done both on the botanical side of the plant (*vide* above) and on the administrative side of seed supply and joint direct sale than has hitherto been possible.

15. All this would mean money, staff and time, the expenditure of which, considering the importance of cotton both to agricultural and industrial India, is justified. There are, however, many other crops demanding attention and if it be thought that cotton is making undue calls on general revenues, a cess of two annas per pressed bale would mean some five lakhs of rupees a year.

16. As far as Madras is concerned, licensing of ginneries is mostly needed to ensure renewal of rollers for other mechanical reasons.

17. I believe it would be a mistake to abandon crop forecasts. They are admittedly at present not satisfactory, but with increasing district staff and better press returns, improvements can, I am sure, be obtained, but the person who is responsible for the preparation should be in a position of control over some district staff. The difficulty is to get the districts to realise that these returns mean anything and the next to get the office which compiles them to realise that their responsibility is not confined merely to compilation. I do not think this last is now the case in Madras.

APPENDIX II.

Summary of Interviews by Mr. D. T. Chadwick, I.C.S., Indian Trade Commissioner, with—

1. Mr. A. V. PATON, Chairman of the Liverpool Cotton Association.
2. Mr. JACKSON, Spinner and a member both of the Empire Cotton Committee and of the Cotton Control Board.
3. Mr. BUSH, Liverpool Chairman of the Arbitration Committee on East Indian Cotton.
4. Mr. GLAZEBROOK.
5. Mr. SHAND, Liverpool broker.
6. Mr. BLACK, Manchester.
7. Mr. BROWN of DENYS and BROWN, Liverpool.
8. Messrs. BUCHANAN and WINGNALL, Liverpool.
9. Mr. CONEY, Broker and Member of the Liverpool Arbitration Committee.
10. Mr. LEONARD, Liverpool.
11. Mr. A. S. PEARSE,

On behalf of the Indian Cotton Committee.

INDIAN COTTON TRADE WITH LANCASHIRE.

1. *Advantages of a wide market as against a narrow one from the spinner's point of view.*—A wide market for purchasing raw material offers so many more commercial facilities than a narrow one that, unless a manufacturer is engaged on a particular line requiring some special grade of produce, the natural tendency is for him to purchase in the widest and best organised market. Differences in price obtainable by going outside may not compensate for uncertainty of supply or greater difficulties in finance, etc. In making his contracts for selling his yarn, the spinner has to do two things as cheaply as he can:—

- (a) Ensure a supply of cotton, of the quality and kind he requires, coming in as he needs it.
- (b) Know very approximately what the raw cotton will cost him.

2. The market in American cotton is of course the best organised and, in using American cotton, the spinner as a rule adopts one of two courses (or both) to ensure the regular working of his mill.

- (a) In order to cover the forward workings of his mill and to secure uniformity of quality, a spinner may be offered and accept a large block of cotton of a guaranteed type for delivery at a fixed number of bales per week or month for many months ahead, sometimes even for a period covering the whole season. The price is arranged at an agreed number of points on futures, and the spinner can, at any time (usually as he sells his yarn), call some cotton which will cost him the future contract price plus the agreed number of points on. In buying this way, the spinner can always base his yarn price on the future quotations and keep his bought and sold balanced by calling cotton as he sells yarn.

- (b) Or he arranges to see the actual samples of the cotton before buying. Thus if he has made a contract to deliver 200,000 lbs. of yarn over a period of say five months for which he needs 500 bales of raw cotton, he can buy 500 bales of futures spread over the same period and pick up his cotton as he finds lots which suit him selling out the futures as he buys the actual and thus keeping his books balanced and seeing his cotton before buying.

These systems clearly mean that:—

- (a) The spinner does not store any more cotton than he needs.
- (b) He gets cotton as he needs it and can price his yarn contracts closely, and they could only work:

- (a) If there were large stocks of raw cotton always at hand, i.e., in Liverpool and also plenty of buyers. Many spinners go to Lancashire and see their cotton,
- (b) If the cotton ran very uniformly both in nature and quality from year to year.

3. Another result of the large market and of the general uniform quality of the cotton is that it is a very readily saleable article and banks would often finance it up to 85 per cent. to 90 per cent. of its value in pre-war times. (Margins are of course wider now.) Finance was thus easy.

N.B.—During the war the proportion of business done c.i.f. from America has tended to increase.

4. *The Liverpool Market in East Indian cotton.*—It is well known that stocks of this class of cotton in Liverpool are not, as a rule large, that, on the whole, the cotton is more variable in type and quality than is American and, which is more important, it is not in the bulk of a nature generally usable in Lancashire and is, therefore, not so freely saleable in Lancashire as long as American cotton is readily available. All this means is that the market for it locally is restricted. From this several results flow.

APPENDIX II.] SUMMARY OF INTERVIEWS WITH LANCASHIRE REPRESENTATIVES.

[Continued.]

The only possible way in which to "hedge" or "cover" transactions in East Indian cotton is to deal at the same time in American. But American is not a proper cover for Indian as the prices of the two do not move in complete sympathy. Thus, when American falls, Indian also will fall but as a rule it starts to not move in complete sympathy. Thus, when American rises it starts to rise later, as a rule, largely due to the fact that Liverpool is not the only market. The big demands for Indian cotton in Bombay and Japan affect this delay in movement of prices. Again if a man (a spinner or other) finds himself with a lump of Indian he does not like and has to sell, he may often find that he has to wait for a buyer or is squeezed in the market. Similarly if he is short and runs in quickly to buy, he may find prices up against him. In other words, the spot market in Liverpool lacks some of the steadiness of the wider American one. For the same reason, the Banks are not generally prepared to advance to an equally high limit against Indian as against American. In fact, it was put that, when an advance was asked for against Indian cotton, in fixing the limit of their advances the banks were guided more by the name and standing of the firm asking for the advance than to the security of the cotton.

All these tend to make much of the trade in Indian Cotton to be done on a c.i.f. basis—which again involves a little more trouble to the spinner than the American method because.

- (a) He does not know so well when his cotton will arrive—e.g., January-February shipment may mean delivery early February or almost to April.

- (b) He has to buy outright, house and insure larger quantities of cotton than he need do if the cotton came forward month by month to meet his requirements. Further, offers of East Indian cotton begin to be made when the crop is growing for shipment as the crop comes to the ports and forward up to March-April and in some growths to June. Thus, by the end of June, spinners must have in hand (and finance) cotton sufficient to carry on till the new crop arrives in England.

- (c) If when the cotton does arrive, he finds it unsuitable for his purposes—unless he has in his contract a rejection clause—he has to carry it and get rid of it as best he can—not infrequently having to wait some time and sell at a loss.

5. The point of all the above is that the spinner often finds it easier, quicker and simpler from the commercial and financial points of view to use American than to use Indian cotton. These are conveniences which react on the price and popularity of cotton. Roughly speaking, in fact, when a kind of cotton begins to lose favour the whole machinery of the market tends increasingly to drive it more and more out of favour.

6. *Other narrow markets.*—It is not suggested that the Indian is the only narrow cotton market in Liverpool. That for the Egyptian crop is also narrow and it suffers from disabilities somewhat similar to the Indian one with important differences.

- (a) There is a futures market in Alexandria and many cover or hedge there. No one I met recommended a futures market in Bombay.

- (b) If a fine spinner gets a lot of Egyptian cotton unsuited to his needs, he can still sell it on the whole readily in Lancashire because it is usually suited to some one spinning a somewhat lower count of goods. Thus he does not get left with it as the holder of unsuitable Indian may.

The Egyptian and Indian markets are both narrow but the Egyptian is at the other end of the scale and is a safer and better one than the Indian one.

7. It is possible that the quantity of Indian cotton coming to Lancashire will not be sufficient in itself to provide the commercial and financial conveniences now enjoyed by American. The proper cover or hedge for Indian should be American. This means that prices of both must move in closer sympathy though the Indian and Japanese demand will always tend to cause variation. To be in this position the Indian cotton offered must be able:

- (a) To run with some of the American both as regards staple and grade and strength.
- (b) Above all it must be even running and uniform year to year. This last is essential as otherwise the two can never be complementary.

If these points be established so that the two run together, spinners will find it much easier to deal with Indian and the prejudice against it will get less and less.

8. *East Indian Cotton. Arbitrations, Merchants' cotton, Guarantee cotton, etc.*—There are really two almost separate questions in arbitrations, viz., grade and staple and arbitrations may be on either or both. Grade is colour, appearance, freedom from dirt and leaf, etc. Generally speaking, if a particular type (or mark) or staple be mentioned in the contract, arbitrations may arise on any defect from the type or mark including staple. If the contract is only for, say, F. G. Fs. So and so—then arbitration is usually confined to grade, i.e., condition, freedom from stained cotton, from leaf (here it may be noted that blackened leaf is a much more serious defect than brown leaf—it sticks more in the spinning), general bad colour, lack of bloom, etc. It must be remembered that the spinner wants the cotton to use and not for cases have become marks. It must be remembered that the spinner wants the cotton to use and not for resale and consequently expects to get the staple he is looking for which mostly means cotton uniform with what he has been using. Copies of the forms of contract on which cotton is sold are appended.* Among the alternative conditions is a clause which is generally referred to as "1/8 Mutual" Clause. By this if the consignment is slightly above standard, the seller can claim an extra price for it up to 1/8 but if it is more than 1/8 "off," the buyer has the option of total rejection. A clause such as this obviously helps to ensure quality. As far as I could find, many of the larger sellers also are prepared to sell on it especially where the cotton comes from tracts where they have their own buying agencies and ginneries up-country in India and, in other words, where the whole handling is under their own control from the start. If the cotton is rejected, it is invoiced back to the seller at the prices of the day.

Thus although many of the larger houses do deal on this "one eighth mutual" clause and it affords a guarantee for quality, shipping firms often fight shy of it until the conditions and grade of the new crop are determined. Thus, owing to the late rains in the last season, merchants dealing in Oomras and Bengals ultimately refused to sell with the one eighth clause. The general effect however of such a clause is to maintain quality. Bombay would be the better place in which to enquire whether much "Home Guarantee" cotton is sold under this clause or whether shippers usually only agree to it when handling cotton which for the most part has been bought direct by their own employes up-country.

* Not printed.

9. There, however, seems no doubt that much cotton has been shipped to Liverpool which could not possibly come up to the types and standards which it purported to be. This has helped largely to confirm the bad opinion of Indian cotton. The opinion was expressed that "Home Guaranteed" cotton was much more frequently at fault here than correctly speaking "merchants' cotton." The custom has sprung up firms shipping under their own marks cotton which they have bought in Bombay from local dealers under "guarantee." There appear to be two forms of this working :

- (a) In which the shipping firm inspects every bale, passes and classifies according to its own type.
- (b) In which the shipping firm takes it more or less blind and affixes its mark relying on the "guarantee" given it by his dealer to protect it against loss.

Several in Liverpool maintain that a distinction should be made between "merchant" cotton and "guarantee" cotton—the first term being restricted for cotton handled from the earliest stages by the shipping firm. It was widely believed that cases had occurred in which cotton had gone to arbitration and even to appeal in Bombay and after being allowed locally had even then been shipped against the original type or mark (or something very near it) fully expecting that on arrival at Liverpool it would go again to arbitration but hoping that the penalty inflicted would not be so heavy as that already imposed in Bombay. This is nothing but a gamble in arbitrations. It also seems at times to have paid.

It is suggested that mutual arrangements be made between the Liverpool and Bombay Associations whereby firms offering for foreign sale cotton arbitrated upon in Bombay should disclose the fact that such arbitration has taken place and, if required, the penalty imposed should be declared.

10. A very similar point was made by some with large experience of the trade who said that cotton would be shipped by some who knew it was not up to standard, but yet sent it forward with confidence because there was a fair prospect of success, hoping with fair reason that the differences in price of grades in Bombay would exceed the allowances imposed by the arbitrators in Liverpool.

11. It would look as though there were often a lack of full mutual knowledge between Bombay and Liverpool which not infrequently operates to the advantage of those who ship below standards. This not only brings bad stuff over to Liverpool but also tends to confirm the belief of many in the unreliability of Indian cotton and must react on the general reputation of the trade. To the outsider, it would also appear as if Liverpool had not been sufficiently severe at times in arbitrations but, against this, it is urged that the system of arbitrations originally arose and was primarily intended to meet and adjust legitimate differences of opinion which necessarily arise from time to time when dealing with raw products. It was not meant to meet cases of almost wholesale substitution.

12. *Arbitration on Continental shipments.*—Most of the cotton for Italy, Belgium, France is apparently sold subject to Liverpool arbitration. Some of the German purchases were Liverpool, some Bremen arbitrations. Bremen standards appear to have been below those of Liverpool—in fact everyone seemed agreed on this but it was said that there was also a tendency to penalise the British shipper where possible. Italy, South Germany and Belgium spinners would use and spin cotton which practically no spinner in Lancashire would look at.

13. Before leaving this section, an extreme case of recent mixing and adulteration may be mentioned as illustrative of the lengths to which it is sometimes carried. Several lots of cotton were shipped against an Oomrawattee mark but, on examination, the adulteration was so great that it would seem as if waste had even been used for mixing—and allowances up to 200 points off were given. It seems extraordinarily difficult to believe that any shipper knowing his job could have passed such cotton as up to type and the thought comes to one almost irresistibly that he had been gambling on the allowances that might ultimately be imposed. Failing such an explanation it almost seems inexplicable. The suggestion was made that it would greatly help the reputation of popularity and sale of Indian cotton in Lancashire if the dealers in Bombay through their Association could come to an agreement with the Liverpool Association and others overseas whereby when penalties above a certain limit are imposed at Liverpool, etc., the details should be communicated to the Bombay Association for some disciplinary action there against the member who shipped, or enquiry from him.

14. *The needs of the spinner.*—The first thing the spinner requires is uniformity year to year. There are many who work on American cotton who order the same mark from the same place year after year. They wish to do the same with the Indian but fall off when they find they cannot get uniformity year to year owing to mixing or other causes. But several of the marks of the better Indian shippers steadily find a market in this way. Another instance was given by an Indian shipper now established in Lancashire in which he had persuaded a spinner to try some of his own line of Surats and as a result had obtained a steady customer not because they were extra good Surats but because he controlled his own ginny at which the crop was bought and thus controlled throughout the handling of that particular mark, and as a result he found it kept uniform and had an absolutely steady purchaser for it. Uniformity implying both uniformity throughout the lot and uniformity in type from year to year is the first essential.

15. *Staple.*—The length of cotton most suited to the demand in the Lancashire is 1" to fully 1½" but there is annually an increasing enquiry for 1½" to 1¾". We do not hesitate to say that the chief demand in Lancashire is around 1½" staple i.e., staple between 1½" and 1¾". Other firms corroborate this. The point is that our Indian staple cottons ranging around 1" are still on the low side for the main Lancashire demand and each additional ¼" above makes a great difference both in demand and price.

16. *Strength.*—It is doubtful whether all who work on cotton improvement in India realise the importance of strength and the presence of impurities which has created in the minds of the Lancashire operatives much of their prejudice against Indian cottons and many have a prejudice against them. This point becomes clear as regards working the cotton from the figures on p. 225 of Mr. A. S. Pearce's third report on Indian cotton.

	England.	India.
Number of operatives per 1,000 spindles (probably now below 4)	4.2	28

and I believe the number per 1,000 in England is still lower. Now if one man in England had to keep that number of spindles running continuously he soon gets tired of handling a cotton which is frequently giving broken ends in the spinning. Also the English spinner spins stronger yarns on the whole than the Continent. A sample of the last was given—an English spinner will take good Barsi, strengthen it with American and produce a 22's weft, whilst the Continental spinner will probably produce a 24's weft out of the Barsi alone. Of course, there will be no comparison in the strength of the two. "Strength" however is a

somewhat elusive term. As Dr. Balls points out, strength in yarn may depend not so much on the strength of single fibres but on the twist of the fibres. This too is very important for Lancashire yarns.

17. *Comments on various Indian cottons.*—There was extraordinary unanimity of opinion on several of our Indian cottons.

Lancashire likes and will take, provided she gets them pure and uniform, any amount of Cambodia and Tinnivelly American, or Tinnies, especially the selected ones, or American seeded Sind—presumably also Punjab American, but I could not ascertain for certain whether they did not confuse this with American seeded Sind.

Barsi also often has a good staple but is desperately full of leaf.

Surtee Broach—yes—but Broach generally seems to have gone all to pieces latterly—being mixed, variable and shot. They all seemed doubtful about Broach and whither it was tending.

Better Bengals and Rangoons had more than kept their place and had they thought tended to improve. Better Bengals would go more readily if staple could be improved a little and a certain harshness, which some samples, have removed.

Kumtias—"You cannot sell them" Kandeish—"Hardest of all to sell, almost impossible." Oomras—"Anything seems to come forward under this name now. There is no such thing as No. 1 Oomras." At the same time it would seem that Lancashire has recently seen very little of the best M. G. Kumtias and of the best M. G. Westerns, not being prepared to pay competitive prices with Japan and India for them. Broach "appears to have gone West altogether," and again "very badly mixed, hardest of all to sell" and again "Quotation for finest Broach is fictitious—no such thing coming forward. Staple gone dead off."

18. *Can Lancashire use more Indian cotton than she has done in the past even if our cottons are not largely improved in staple?*

I asked this question of many. These were the answers: Yes, especially of those of the Cambodia, American seed kind, Tinnies, Punjab American, if given pure and uniform year by year.

Yes, but the Lancashire spinner needs educating to them. He will take them if he gets purity and uniformity.

Yes, provided there is none of this mixing and there is certainty of type. What Lancashire needs is staple or, if there is not staple, exceedingly high grade; also there ought to be an opening for the shorter ones for hosiery yarns and for mixed cotton and wool or mixed cotton and waste goods. The manufacture of this last class of goods has been started and Indian cotton has been used. But generally the opinion of several was that Lancashire, through long distrust of Indian cotton, had not hitherto been prepared to pay the price necessary to secure the best types of Indian cotton and so did not know them fully.

19. *Commercial facilities for dealing in Indian cotton.*—The natural hedge of cover for Indian staple cotton is American and especially, if Cambodia is given pure and up to the best samples in staple that have come forward and if the other Indian staple cottons are improved a little more in staple, then American will form a natural and safe hedge or cover and many of those difficulties mentioned at the beginning of this note will disappear.

20. *Damping of cotton.*—I heard very little of this. Damping occurs in cotton from one or two tracts but, taken as a whole, Indian cotton on this score is pretty good.

21. *The present and future.*—There is little doubt that, in the present and early future, India has possibly the biggest opportunity she has had since the American war for getting her cotton better known and better established in England because:—

(1) Lancashire is very apprehensive of her supply due to the steadily increasing quantities used locally in the United States of America.

(2) Both Lancashire and the Board of Trade are very anxious to see the Empire as a whole much more self-supporting as regards cotton.

(3) Owing to these two reasons, Lancashire is more ready than before to try the possibilities of cottons she has hitherto not largely used.

(4) Many in Lancashire are realising that India has better cottons than a few years ago they were inclined to give her credit for. Messrs. Pearse, Todd and others have preached this for some time.

(5) There is also the probability that the manufacture of grades of goods which formerly were largely made on the continent may be taken up, in fact some firms have started.

A greater opportunity exists and is likely to exist than hitherto in Lancashire for Indian cottons of suitable character.

22. *The immediate present.*—Freight difficulties hamper developments from India as from elsewhere.

As is well known, the Cotton Control Board has been instituted to regulate the cotton industry during the present difficult period. Owing to the short supply of American they have decreed that mills not on Government contracts can only run fifty per cent. their spindles. Thus many spindles are idle. But any mill using only East Indian cotton can use any number of spindles. In other words East Indian cotton is free. As a matter of fact in the last five months there have only been applications from six mills for free spindles for India. The absence of these restrictions on the use of Indian cotton thus forms an opportunity for spreading its use, if, of course, it can only be shipped. Spinners and brokers urged the necessity of trying to keep shipments going but insist on using the freight only for good spinnable cotton. Much consignment cotton has since the war been shipped as spinnable which was simply unsaleable and freight had thus not been put to best use. Some urged that consignment cotton should be refused shipment in India as long as there was cotton purchased by spinners waiting freight in India.

APPENDIX III.

Note by Mr. R. W. Brownson.

East Indian cotton.

In connexion with the increased attention which is being drawn to the urgent question of the improvement of the staple of East Indian cotton, and as one who has had opportunities of observation extending over about forty five years, I venture to offer a few personal reminiscences relating to the gradual, and with few exceptions, almost universal deterioration which has marked the development of most of the leading descriptions of Surat cotton, and which commenced about the year 1875 or 1876. At that time I was in

charge of the Cotton Department in the firm of A. and A. G. Brown and Co. of which my eldest brother, who had passed a number of years in Bombay, was the head. About 1864 he engaged and sent to one of their interior ginning establishments, the Mofussil Press and Ginning Co., a gentleman who had applied to him for employment and who after a few years left and allied himself with a wealthy native. Somewhere about the year 1875 or 1876, this gentleman presented himself at our office in Liverpool and asked if we could sell for him 500 bales of "Oomrawattee" cotton of which he produced a small sample. While possessing some of the characteristics of Oomrawattee, the staple was much nearer, if not identical with Bengal, which was then of a shorter staple than we now get from Bengal. It may be noticed in passing as a curious fact, that the only growths of East Indian cotton which show an improvement and that, to my mind, a very marked one, as compared with the growth of these earlier days in the seventies, are, Bengal, Sind and Rangoon, which were then the shortest staples of the lot.

Our friend explained that while grown on Oomrawattee soil, it was grown there from Bengal seed, the ingenious native having caught on to the fact that the shorter the staple, the heavier is the outturn of lint, a fact which has become familiar to all who take the trouble to study such matters. He also explained that if we could countenance the selling of the cotton as Oomrawattee it would, at the current price of that growth, leave them a considerable profit (to my recollection somewhere about $\frac{3}{4}$ d. per pound) owing to the reduction of cost resulting from the output of somewhere about twenty if not thirty per cent. more lint per acre. My brother refused of course to sell the cotton as Oomrawattee, but agreed that I should offer it as "Oomrawattee description," giving it if desired the title of Bilatee. I sold the 500 bales within an hour or so at about $\frac{3}{4}$ d. below the current price of Oomrawattee of same grade, namely "Fully Good." I very vividly recollect my brother saying to me, when I reported the sale in a very serious tone—"That's the death knell of the Surat business." I said, "Why," when he replied "If you knew the native as I do, you would know that nothing could appeal to his inborn instincts more temptingly than the vista of prospective gain by a perfectly legal system of bastardisation such as this novel discovery opened up," and he added "You will see if I am not right that it means that Dhollera will be bastardised on the same lines probably with Sind, and Broach with Dhollera, etc." He was what the Americans call "dead right" and, alas, our Liverpool arbitrators, as I have contended during these last thirty odd years of experience in arbitrating for Continental Trade buyers, instead of combating the evil by making drastic allowances upon these bastard growths, have rather fostered the evil by, in my opinion, a very culpable leniency. It has often seemed to me that since many leading merchants in Bombay adopted the system of putting their marks on cotton supplied and guaranteed as to grade by native dealers, the weight of influence which ought to have condemned and discouraged the evil had unfortunately been on the other side.

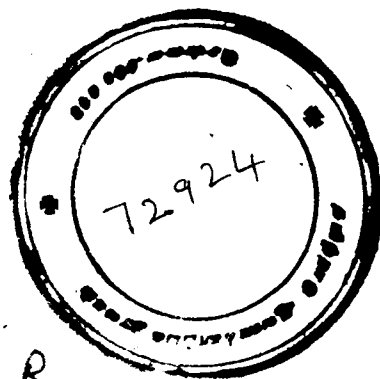
I have no hesitation in asserting that with the exception of Surtee Broach and a few other specialities, the staple of all the leading qualities of Surat has deteriorated in the last thirty years to an extent that is lamentable in the extreme and which could have been avoided, had the Bombay merchants and the arbitrators who acted for them in Liverpool faced the evil boldly and, by inflicting heavy penalties, stamped it out.

It is a curious fact that apparently only in the last year or two, it appears that in America some ingenious growers have hit upon what is apparently a precisely similar method, evidenced by the arrival on our market of a certain quantity of what has been termed "half and half" cotton. This has been "salted" in with better staple, greatly doubtless to the advantage of the seller, for I am told that the shorter staple gives, just as in India, a very much heavier yield of lint at the expense of the length of staple. It is only fair however, to say that this development is doubtless primarily due to the ravages of the boll weevil, owing to the fact that while much inferior in staple, it is equally bright and matures very much more quickly, so that the danger from the weevil is much lessened.

It is gratifying however that in regard to this last development, our Liverpool Cotton Association acted promptly and it may be hoped effectively by making "half and half" cotton untenderable and, had the same course been followed in the case of Surats, the latter would probably have improved instead of deteriorating.

I venture to submit these reflections on past history in the hope that they may prove interesting in view of the effort which we hope is now going to be made to recover lost ground in India and so to improve the quality of its cotton that it may play the part it ought to do in what I think is the most vital problem for our great Lancashire Industry, namely making it independent of America for its supplies.

It has always seemed to me a mystery why India with its vast extent of fertile soil and many climatic advantages should not produce more than about 75 to 100 maunds of lint to the acre and of such inferior quality that the Lancashire spinner in times of scarcity and dear prices, praying for more cotton, is still constrained to add as he did fifty odd years ago "but not Surats."



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